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DECEMBER, 1890.

THE YEAR'S work of the gardener, the fruit-grower and the farmer is now nearly completed, and we can look back and review the twelve-month for our future advantage, if we are determined to profit by our experience. At this time last year it was thought that a year with more unfavorable weather conditions for most crops could not be experienced than the one we had then passed through, and it was probably the worst of the last quarter century; now, however, we know that the weather has been far more unfavorable for nearly all crops this past year than the year before in nearly all regions of the country. As a result, most crops have been poor and light. The one region that may be excepted in this statement is that of the Pacific coast, where good crops of nearly all kinds have been the rule. With the poor crops and small receipts for the same there is more or less discouragement among soil tillers. This is natural, but our reverses should incite us to do all in our power to mitigate similar evils in the future. As far as we can learn it is having this effect, and apparently these adverse seasons will eventually improve our methods, both in the treatment of lands, and the cultivation of crops, and in other respects. Last year, in consequence of the rains, attention was given very generally to land drainage, and probably more tile was manufactured and laid than ever

before in any one year. The greater amount of rain the present year is forcing a still larger number to improve their grounds by underdraining. This improvement is substantial and permanent, and will have its effects on all future crops. All over the country these improvements have been made, and the good work will not end with what has been done. Every piece of ground that is underdrained becomes an object lesson when the benefits of the operation are perceived, as they will be, even the next season. There is no one thing that can be done that will so surely and economically increase the size of our crops as underdraining. Even heavy manuring will have but little effect in wet seasons on lands overcharged with water.

The wet weather has been favorable to the growth of the lower forms of fungi, which are parasitic on other vegetation. Among the grains, the oat crop has suffered most severely; most of our fruits have been more or less injured; potatoes have been greatly injured and many destroyed by rot. To combat these destructive agencies the Agricultural Department at Washington, assisted by many of the State Experiment Stations, has shown great efficiency. It is now claimed that the potato rot may be prevented by the use of copper solutions, especially by what is known as the Bordeaux mixture. Forthcoming Reports

of the Department will be looked for with interest for accounts of experiments with this destructive disease. The potato rot has long baffled the efforts of the best cultivators in Europe and Great Britain and this country, and if it has now been practically brought under control, as it seems there is good reason to believe, it will be considered an achievement worthy of general rejoicing. The injury of the potato crop in Ireland has already, this year, caused much want, suffering and disease. The fungus of the tomato rot, which is increasing from year to year, is very similar to that of the potato, and probably the same means used for the one will also be effectual in the case of the other. As to the evils with which we have to contend in fruit-growing there is reason to think that the fruit-growers will ultimately triumph through the arts of applied science which is now being rapidly developed, and the intelligent and energetic are those who will be first to take advantage of new and improved methods and receive the benefits therefrom.

A few only of the crops injured by fungi have here been mentioned, because they are most prominent, but gardeners, fruit-growers, florists and farmers, all meet reverses of the same character in many of the crops they cultivate, and the present advances that have been made in the destruction and prevention of fungi is like the slow lifting of an oppressive cloud that has long overshadowed their labors and obstructed the heat and obscured the light of the life imparting rays necessary to the highest welfare of all vegetation. We have great reason for hope, and among the agencies that will promote the good of all none is more powerful than the press. Through the agency of the newspaper and the magazine the discoveries and experiences of all are made known for mutual benefit.

One department of practical horticulture is moving forward in all parts of the country with a steady progress, this is commercial floriculture. The taste for flowers is constantly growing, making a steady demand for them at all times, and especially on all festal occasions. The prices are such as to be fairly remunerative, and the intelligent, enterprising flower grower, with good business tact, has at least a chance to make a com-

fortable living and to lay up something for a rainy day. Along with this taste for flowers there is a corresponding increase of amateur flower cultivators, and garden and house plants are everywhere receiving a greater share of attention. This is particularly gratifying, for costly architecture and rich house furnishings would still produce a stiff effect without the softening tone of flowers and plants both in and outside of the house.

But there is much that is faulty and incongruous in the planting of house grounds, and the most beautiful results are wanting for lack of knowledge of proper planting. Of course, this will always be so, but we may hope that increasing knowledge in this direction may be made as the years go by, and the principles and practices of horticulture are better understood. These improved ideas will spread through the community by means of garden publications of all kinds, by personal observation of the best planted places, and also by the influence of fine public parks, a taste for which is rapidly growing in our cities and larger villages.

As to fruit-growing, as a business, this is now so developed that there is no danger that it will be neglected wherever it can be made remunerative. Of course, orchardists for a few years past have met with serious reverses, and this is true in a remarkable degree the present year, when almost all the tree fruits have failed in the Northern and Atlantic States. But the causes of the failure are directly or indirectly climatic, and as such cannot be expected permanently to prevail. We do not lose faith in the fruit producing capacity of those regions and localities which have already become noted for these products, but believe that the trials which our orchardists are experiencing will ultimately lead to an enduring triumph. The achievements of the past, the acquired skill, the indomitable perseverance of fruit-growers, and the application of science will, in time, banish the evils which have insidiously spread themselves over our fair fruit regions.

The past season has numerous lessons for us, and to learn them we need all the assistance that can be given, and especially shall we find profit by interchange of ideas through the press and by meeting together for mutual consultation.

HARDY ROSES ALL SUMMER.

The writer has become a thoroughbred crank on the subject of roses since he has learned that he may have a great variety of beautiful roses *all summer and autumn* without moving the plants into the house during the winter.

Indulge in the pleasure of a winter window garden, years ago, a dozen fine sorts of roses were tried one winter, and the constant fight with green fly, and other pests, settled the conviction on my mind, that, as a window plant, the rose was one



A VASE OF AUTUMN ROSES.

I was for many years deterred from indulging my love for roses to any considerable extent from two causes, which have also caused many others to cultivate other flowers to the neglect of the queen of all.

In the first place, soon after I began to

of the most troublesome and unsatisfactory, and that those sorts which must be housed through the winter were hardly worth the trouble.

Secondly. My acquaintance with hardy sorts was limited to a few of the common

kinds of summer bloomers, and it seemed that roses for a few days in June and a briar patch all the rest of the year was not as desirable as some other flowers which, though less beautiful, would bloom the entire season, the tea roses being supposed to be incapable of out of door culture unless kept in the house during the winter. Hence, for years the geranium was my leading favorite, with a few other reliable and easily managed plants for variety, both summer and winter.

But those first troublesome roses were put out in the garden in the spring, with the very distinct understanding that, survive or perish, they could never enjoy a warm berth in the house again. Two of them survived the first winter, the weaker one dying after a year or two more. The survivor proved to be thoroughly hardy and bobbed up serenely every spring to give us a few brilliant blossoms in spite of neglect. In the course of a few years, on becoming a strong, well established plant, it forced itself upon our attention as a rare gem, by giving us large, very double roses *all the season through*. This was a revelation; and I began to study all the rose lists I could get, as well as to test such hardy varieties as were recommended for constant bloom. Later I began testing various sorts of the more vigorous ever-bloomers among the teas and other choice varieties, with easily provided winter protection.

The results have been most gratifying, for we now have an assortment of *hardy* tested varieties that give us constant summer and autumn bloom in most of the desirable colors, from pure white to deep, velvety red, the only missing colors among entirely hardy varieties being the yellows and salmons so much admired among the tea roses.

But we have also proven that we can

keep many of the choicest tea roses in the open ground all the year and get grand results from them, with very little trouble in providing winter protection, so that we now have *all* the desirable colors and forms in constant succession, from June to November, and I shall continue careful selections and tests of other varieties, until I have my home place converted into a veritable rose fair all summer and autumn, reserving the window garden for winter blooming bulbs and other choice plants that do not require smoking, dusting and spraying with poisons, etc., to keep down the plagues of lice, etc.

Vermin have given me very little trouble with roses in the open air. The slugs that eat the leaf in the spring and early summer are the only troublesome pests I have so far encountered here, and a few doses of suitable poison settles them for the season. Mildew has never given trouble except once when too much *fresh* manure was used during the growing season.

The beautiful cut heading this article, was photographed from a bouquet cut *September 21st* from bushes grown for several years entirely out of doors, and quite hardy in the latitude of Chicago, where the mercury ranges from 100° in the shade to 35° below zero. It embraces three colors, flesh white, bright pink, and brilliant crimson, with a little filling in of sweet peas, etc., to add grace to the outlines.

Now, if any of the readers of our favorite "Vick's" are specially interested further in this subject, I shall be pleased to reply to all inquiries to the best of my ability, and assist them in securing hardy rose gardens that will give constant bloom and lasting pleasure from June to November.

THEO. H. MACK, *Illinois*.

AUTUMNTIDE.

It is curious how little we remember or regret the vanished summer; the songs of the birds cease for the season, and though many of them are still with us we almost forget their existence; the flowers go, and the landscape grows wan and faded, but still our cup is full; the tranquil skies, and the quiet and calm of the earth fill us with far-away imaginings, and

a still and pensive pleasure; less intent upon details, the fresh bloom of flowers, or the notes of newly arrived birds, we take wider views, our eyes seek far horizons, and we are somehow turned, we know not how, to accord with a season of declining life and light. Asters and goldenrods are generally thought of as specially belonging to autumn, but they

overlap the later summer. August has hardly begun before the first of their long succession is here and they culminate in September; the goldenrods become "silver rods," as a young poetess of ours has called them, long before winter, so hoary and white with their ripened, full winged seeds. But for all this, the first goldenrod plume or aster's blossoms (*Solidago serotina* and *Aster cordifolius* in these parts) is a milestone showing the season's progress; we feel with a sort of shock that the summer is soon to go though it may not yet be gone. The poet Bryant, speaking of these plants, says:

"Till fell the frost from the clear, cold heaven,
As falls a plague on men,
And the brightness of this bloom was gone
From upland, grove and glen."

But none of them care for frost if the brightness of their bloom is gone and, except the starved aster's (*A. miser*), it commonly is before freezing nights come, it is because their season is over. Cut them down in early summer; it will make them a month later and you will see them flower entirely unaffected by frost though it falls every night.

The goldenrods may make themselves too common by crowding the dusty wayside, but here along the woods, springing from verdant sod, they lift their plumes bright against a background of dark beeches, making a picture we would be glad to imitate by cultivation were they a little less numerous everywhere. Our species adorn English shrubberies; only one of our seventy species is a native of Britain.

And what sweet days are those that come when the goldenrod is in its glory, the veiled sun no longer cares to cast a shadow, and the wind stirs not a leaf, when the meadows, mown so long ago, are so brightly green, and the tree cricket feels moved to begin his gentle harping at noon instead of waiting till night as he should, and the temperature, neither warm nor cool, is so delightful. Simple or branched, erect or bending, here eight feet high, there only a foot or two, this clump's every leaf and flower plainly printed on the eye, away yonder an undefined yellow gleam, the goldenrods are everywhere. The autumn is not a constant quantity in regard to colored foliage from year to year; with cloud and rain enough the well ripened leaves full of sub-

stance keep their place until every bush and tree is glowing with color, and both form and tint are retained after they have fallen and your foot sinks deeply into the softly rustling drifts. A gentle rain revives and brightens painted foliage which is never more splendid than under a cloudy sky with everything still moist. But if heat and drouth prevail the leaves shrivel on the trees, after a day or two of resplendence the sun discharges their colors, soon the earth is piled with rolled leaves that rattle loudly and break like cinders under your tread. Or a black frost may kill the foliage of sumac and ampelopsis, a general dinginess prevails and there is little color anywhere.

A character of the later season between the fall of the leaves and the coming of the snow is the perfect silence of many of the days, the quiet that comes when the wind no longer stirs the trees and there is no sunlight, and the far hills are so dimmed and softened,—many of them lost in the haze in fact. The birds are mostly gone, and those that remain prefer to keep still; the conversation of the chickadees is on a low key, and the woodpecker examines the trees in silence. The ponds setting back from the stream, so calm and unruffled, seem clearer than the air; the milkweed seeds resting on them by the tips of their silky fibres are perfectly still; life and motion have died out of the world apparently. How impressive at such a time is this great marshy plain so level and wide, with its deep brown grasses, a long bright line of osier (*Cornus stolonifera*); in the distance above this the purple of the tagalders (*Alnus*), higher still the brown forest mingled with pines under this somber sky when not a blade of grass swings, and the pools of dark water have not a ripple! A thick bed of strong growing plants, now getting out of bloom and somewhat frostbitten, resolves itself into a patch of tansy as I come near, and clumps of live-forever (*Sedum*) are not far away. Tansy, if growing near a stream, often intrusts its offsets to the current and new plantations are thus formed on the lower flood plains. Except for this, the presence of either generally indicates the site of a pioneer's cabin which may have wholly vanished, its hearthstone dug up and carried elsewhere, and all the ground smoothed by the plow; for these plants

were cultivated by the first settlers: the tansy partly or wholly for medical uses, the sedum for ornament. Those were not the days of gloxinias and begonias, at least in these parts. But however destitute of ornamental qualities they may seem to us they had the merit of perfect hardiness—you could rely on their appearance with each returning spring. Here, however, a pile of rough stones shows the place of the fallen chimney, and a deep dent in the sod, marking out an inclosing square, was made by the bottom logs of the house, a mark which will remain forever unless the plow comes this way.

Human life has now drifted elsewhere, the country road avoids the spot, the cows come here to graze, and the building of the robin's nest, the growth of summer, and the sleep of winter are the happenings

of the years that pass so silently. One falls to speculating on the lives passed here, of those who returning at nightfall saw the light from the hearth shine through the dusk; of the children born here, of those buried yonder whose headstones, simple slabs of rough stone, are inscribed only with nature's geologic hieroglyphics; vaguely questioning the silence, broken now only by the tinkle of the stream and the chirping of the song sparrows, until the wail of the locomotive, softened by the distance, comes over the hills from where the mighty tides of commerce and travel are rushing over the iron track; dying away and leaving this quiet nook to a still deeper quiet, and to the care of nature who is now only careful to develop the grass and bring forth the catnip's flowers.

E. S. GILBERT, *Canaseraga, N. Y.*

A BUNCH OF SHAKESPEARE'S FLOWERS.

Did you ever think how dearly Shakespeare loved flowers? He knew them all intimately, true child of Nature that he was; and none of their charms or peculiarities escaped his observing life. How quaintly and beautifully he links them with human nature, forever associating them in our minds; clothing the simple, common wayside flower with a poetic grace, which, like its own dew drop, it will always bear for us. Suppose we take a peep into his garden and meadows and see what blossoms we can gather. Where could we find a sweeter spring handful than these?

"Now, my fairest friend,
I would I had some flowers o' the spring that might
Become your time o' day; daffodils,
That come before the swallow dares; violets, dim,
But sweeter than the lids of Juno's eyes,
Or Cytherea's breath; late primroses, bold oxlips, and
The crown-imperial; lilies of all kinds,
The flower de luce being one."

(*Winter's Tale, Act IV, Sc. III.*)

And here is an ideal bower he has made for us—

"I know a bank whereon the wild thyme blows,
Where oxlips, and the nodding violet grows;
Quite over-canopied with luscious woodbine,
With sweet musk-roses, and with eglantine."

(*Mid. Night's Dream, Act II, Sc. II.*)

Listen to him as he sings of the time—

"When daisies pied, and violets blue,
And lady-smocks all silver-white,
And cuckoo-buds of yellow hue
Do paint the meadows with delight."

(*Love's Labor's Lost, Act V, Sc. II.*)

How appropriate his offerings are, and how gracefully bestowed—

"Here's flowers for you;—

Not lavender, mints, savory, marjorane;
The marigold that goes to bed with the sun,
And with him rises, weeping; these are flowers
Of middle summer, and I think they are given
To men of middle age; you are very welcome!"

(*Winter's Tale, Act IV, Sc. III.*)

And again—

"Give me those flowers, there, Dorcas;—
Reverend Sirs, for you there's rosemary and rue, these
keep
Seeming and savor all the winter long;
Grace and remembrance be with you both,
And welcome to our shearing!"

(*Winter's Tale, Act IV, Sc. III.*)

Here is a pretty picture of a young girl—

"Kate, like the hazel-twig
Is straight and slender; and as brown in hue
As hazel-nuts; and sweeter than the kernels."

(*Taming of the Shrew, Act III, Sc. I.*)

What could be more beautiful than his comparison of truth and fragrance?—

"O, how much more does beauty beauteous seem
By that sweet ornament which truth doth give!
The rose looks fair, but fairer we it deem
For that sweet odour which doth in it live."

(*Sonnet 54.*)

Every flower has its own significance.
Listen to poor Ophelia—

"There's rosemary, that's for remembrance; (pray, love, remember!)—and there is pansies,—that's for thoughts.—There's fennel for you, and columbines;—there's rue for you;—and here's some for me;—we may call it herb of grace o' Sundays;—oh, you must wear your rue with a difference. There's a daisy;—I would give you some violets, but they withered all when my father died!"

(*Hamlet, Act IV, Sc. II.*)

What a tender little dirge sings Ari-
ragus, as he vows—

“Thou shalt not lack

The flower that's like thy face, pale primrose,
The azured hare-bell, like thy veins; no, nor
The leaf of eglantine, whose not to slander,
Out-sweeten'd not thy breath;—
Yea, and furr'd moss, besides, where flowers are
none.”

(*Cymbeline, Act IV, Sc. II.*)

Here is a pretty sun-rise picture—

“Hark, hark! the lark at heaven's gate sings,
And Phœbus 'gins arise,
His steeds to water at those springs
On chalic'd flowers that lies;
And winking Mary—buds begin
To ope their golden eyes.”

(*Cymbeline, Act II, Sc. III.*)

In Mid-summer Night's Dream (*Act II, Sc. I.*) the fairy gleefully sings—

“I serve the fairy queen,
To dew her orbs upon the green,
The cowslips tall her pensioners be;
In their gold coats spots you see;
These be rubies, fairy flavors,
In these freckles live their savors;—
I must go seek some dew-drops here
And hang a pearl in every cowslip's ear.”

On mid-summer's night we “wear fern-seed and
walk invisible,” and as we look eagerly around for
the fairies, surely we can see the little “elves for fear
creep into acorn-cups and hide them there.”

Here is another pansy for us—

“Yet mark'd I where the bolt of Cupid fell;
It fell upon a little western flower,—
Before, milk-white; now, purple with love's wound,
And maidens call it ‘love in idleness.’
Fetch me that flower.”

(*Mid. Night's Dream, Act II, Sc. I.*)

Where Perdita exclaims—

“The fairest flowers of the season
Are our carnations and streak'd gilly-flowers.”
(*Winter's Tale, Act IV, Sc. III.*)

Can we not *see* them, and *smell* them?
And when the impulsive Juliet defiant-
ly asks—

“What's in a name? that which we call a rose
By any other name would smell as sweet!”
(*Romeo and Juliet, Act II, Sc. II.*)

We feel that Shakespeare loves the rose
for itself, and that its fragrance represents
for him its soul.

We have filled our basket with his sweet
flowers, but have not exhausted them;
and as we read his descriptions of many
of our own old favorites, we can say with
the Duke—

“O, it came o'er my ear like the sweet south,
That breathes upon a bank of violets,
Stealing and giving odour!”

(*Twelfth Night, Act I, Sc. I.*)

S. C. REESE, *Lansdowne, Del. Co., Pa.*

ARRANGING THE WINTER GARDEN.

When bleak, chill days and frosty nights
come, what more cheery occupation than
that of putting in order the plant inmates
of the house? Treating them as welcome
guests and trying to decide, without un-
due preference, which shall be most hon-
ored, which shall have the best corner in
the conservatory. Perhaps the calla, for,
with plenty of light it will grow more
symmetrical, and its upright stately beau-
ty, and, under right treatment, its free of-
fering of fair white blossoms, makes it
justly the queen of the winter flowers.
Possibly the conservatory opens from the
sitting-room, with an arched entrance
around which vines may be trained.
There are so many vines well suited for
this purpose that it is a mere matter of
fancy which to select. The German ivy
is most rapid in growth, and the variety
macroGLOSSUS, with dark, rich foliage, re-
sembling the English ivy, is beautiful,
though not so quick in growing as scan-
dens, the light leaved variety. The most
satisfactory vine I ever cultivated indoors
was the COBŒA. It had attained a fair
growth on a piazza during the summer,

and in the fall the branches were taken
down carefully, the large pot carried to
the conservatory and placed just inside
the entrance, while the vine was trained
around the room opening from the con-
servatory. The vine grew luxuriantly,
and gave a profusion of rich purple bells;
the next spring it was placed out of doors,
and grew well, blooming indoors the sec-
ond winter, when it died, seemingly from
exhaustion.

Madeira vine and smilax are among the
easily cared for and rapidly growing vines;
and maurandia is always graceful and de-
sirable. But the very prettiest vine on
the whole list is asparagus tenuissimus;
the delicacy of its foliage, its bright,
cheerful green and perfect freedom from
insect pests leave nothing to be desired.
Then it is invaluable, with its dainty, feath-
ery sprays for bouquet making and deco-
rative purposes, especially as it keeps its
beauty a long time when cut.

The geraniums are the most reliable
plants for the window garden, showing us
something of cheer and beauty, however
adverse the circumstances. If neglect

causes them to drop their buds, there is yet the luxuriant foliage; and some of the variegated or tricolored sorts need no flowers, they are beautiful enough without. A good selection is Black Douglass, the well-known Mrs. Pollock, the Happy Thought, Cloth of Gold and Madam Saleroi. Add to these the ivy-leaved geranium *L'Elegante*, and the pretty zonale, *Distinction*, with some of the sweet scented sorts and there is a winter garden which would afford a great of pleasure, even if there was not a blossom. Among the zonale geraniums, the old favorite, Asa Gray, is one of the finest bloomers. Master Christine is a single geranium of a bright pink which is almost sure to bloom; Dazzler, rich scarlet with a white eye, and White Clipper, pure white, are charming varieties.

Where there is limited room, perhaps fuchsias are the next best choice after geraniums,—and among these flowers, *Speciosa* is the very best variety for winter blooming; Pearl of England may be ranked next, and Carl Halt is well recommended; while Storm King and Berliner Kind are excellent double varieties.

Each flower grower has a special fancy, and the fair gardener may have double petunias, heliotropes and lantanas in her collection; indeed heliotropes, the sweet flowers of Clytie, are almost indispensable, but between the large plants there may always be found room for the dainty Chinese primroses and the cyclamens.

If the only winter garden is a jardinière and brackets at the windows, then, indeed, there is much in choosing and arranging—to get the most and best in a limited space. Even then, much may be accomplished with small and thrifty geraniums, say of three varieties; a fuchsia, two or three foliage plants, and trailing plants at the edges, taking care always to pinch back and insure stocky growth. For window brackets, the large-flowering oxalis is always desirable, and a pot of *farfugiums* gives a pretty effect.

Dracæna terminalis is a foliage plant deserving a place in every collection, and is especially useful in a jardinière, giving a beautiful bit of color, and enduring the dry atmosphere of the ordinary room perfectly. The *achyranthus* and *cineraria* are easily grown, and produce a good effect in contrast with other plants; while

of the ornamental begonias, *Rex* is most sure of giving satisfaction, and is seemingly more hardy than other varieties. Many of the ferns do very well indeed with room culture, if they are given sufficient water and are kept free from dust. The *Lygodium scandens*, a charming climbing fern from Japan; the pteris, which has a band of white running up the center; the *adiantum*s, the English Hart's Tongue, which is especially beautiful and graceful; and many of our every-day varieties, which need only to be carefully lifted into a well-drained pot of rich woods soil to present a bright fresh appearance all winter. Another useful plant for room decoration, and one which endures a dry, heated atmosphere, is the India Rubber tree; its thick glossy green leaves contrast well with other plants, and if growing in a pretty jar it is very useful to move here and there.

But while there is great pleasure derived from the cultivation of flowers, there is also much work, and certain offices which need to be performed toward the winter garden should be regarded as positive duties, and conscientiously discharged, for unless they are there is sickly growth of plants and dearth of blossoms. One great cause of failure to secure blooms is injudicious watering—deluging at one time and withholding at another, and paying no attention to the needs of the different varieties. The appetites and needs of plants are as varied of those of people, and their temperaments differ, too; there are the sanguine, the sensitive, the phlegmatic—each requiring to be dealt with accordingly. While one plant will thrive, notwithstanding the utmost neglect, and subsist on almost nothing, another must have nourishing food and warm drink. It is a good plan to adapt the water to the temperature of the room, and always be quite sure that the drainage is good. Often a plant will droop and look sickly, when, if the matter is looked into, it will be found that water stands in the bottom of the jar. A bent wire is always useful in this case, for by penetrating the holes at the base of the pot, and stirring the earth, passages will be made for the escape of stagnant water and gas. Then water freely, being sure that the water runs through quickly; drain all off, loosen the soil at the top of the jar and withhold

moisture until the plant is again healthy.

The calla, as is well known, requires plenty of quite warm water; if in a double jar boiling water may be used in the lower jar and will wonderfully hasten growth and blossoms. Fuchsias are thirsty plants, especially when in flower, and moisture is necessary to the Chinese primrose. The majority of plants require a weekly bath; in fact, nothing so invigorates them as a shower bath of tepid water. Those which cannot be removed readily for the showering, may have their leaves sponged.

The ivy should have its leaves sponged frequently, while primroses and ornamental leaved begonias should not have their foliage wet, but be well watered at the roots.

Once in sympathy with the needs of the various plants and understanding their little crotchets and whims, the care of the winter garden is a sinecure and a never ending delight; and no matter how deep the drifts are, or how the snow blows and whirls, it always seems a flowery pathway leading right on to spring.

ADA MARIE PECK, *Waterville, N. Y.*

NATIVE FLOWERS.

For those who live in the country, or, who living in the city, have still a plot of ground which they "can call their own," and to whom the fields and woods with their vast floral treasury are accessible, there is little excuse if they have no flowers in the garden. The plea "no money to spend on seeds or plants," or, "I cannot dig, to beg I am ashamed," certainly will not "pass muster," save the first part of the last quotation, which expresses the condition of many an unfortunate woman, who for want of time and strength can truthfully say, "I cannot dig," and must therefore view the well-kept flower bed which her soul covets, only with the mind's eye.

Whether it is the truth of the old saying, "Familiarity breeds contempt," or the false idea that that which costs nothing is worth nothing, which has so long held in abeyance many of our loveliest native flowers, while a foreign element of less worth has taken and held possession of our gardens, it is difficult to decide. The fact remains, however, although happily a change for the better is taking place, and the once despised "American weeds," are beginning to assume their rightful position beside their imported rivals. More respect might have been paid the so called "weeds," had people but taken into consideration the fact that the plants which they, and their ancestors before them, have cultivated from time immemorial were simply weeds in their native land, and *sometimes* hardly respectable ones at that,—witness the centaurea or blue bottle of Europe, (better known to us as the bachelor's button of our childhood's days), and the corn poppy,

or Papaver Rhæas, a pest in the wheat fields of the English farmer, though now by careful selection and culture become one of the gayest ornaments of the garden—the Shirley poppy.

The daisy craze of a few years ago, though carried to a preposterous extent like most of the popular fads of the day, had, amid its rubbish, a motive power or element of life in the fact that the hitherto despised field flower, with its golden disc and snowy petals, poised on the long and slender stem, possessed a beauty and grace that its abundance had in the past, so to speak, kept from sight. Out in the "wild corner" its starry blossoms are swaying in the June breeze close to the clematis, whose constellation of larger stars look down upon it. The one a flower of the field, which came of its own accord to seek admittance where its friends are gathered together, the other, expensive hybrid, carefully planted, which when in full bloom attracts much attention from passers-by. Yet can we but admit the probability that there are few flowers in cultivation whose beauty would produce more effect on the beholder than that of a field of wild daisies upon one seeing the daisy for the first time!!

We look with delight at the beds of coleus and geraniums, and with curiosity, if not with unqualified admiration, at the floral mosaics, wrought by the professional gardener, with plants of various hues, but nature does her gardening on a grander scale, as the fields of waving daisies, and dancing glinting buttercups can testify. The blue robe with which the echium wraps the hillside, and covers the stony, gravelly pastures, is of matchless

beauty, and the broad expanse of linaria lights up the summer landscape with a halo of gold. What a pity that the beauty of these plants shall be their only good quality, or that the evil in them should so sadly eclipse the good! The farmer sees little in their hues of blue and gold to compensate him for the wasted acres which these intruders have wrested from his grasp, nor do the fair white daisies gladden his heart, since they neither improve his crop of hay nor benefit his pasture land.

Fortunately for Agricola our admiration for these troublesome inhabitants of his fields does not increase the weeds, while the daisies picked for decorative purposes, or for personal adornment, may *slightly* reduce the year's crop of seed. The questionable attributes of the echium, the linaria and the daisy, form no argument against the culture of *native* flowers since this trio, like many if not most of our "pestiferous" weeds, came from the "Old World."

There is little danger of ruining land to any alarming extent by cultivating those plants which are indigenous to the soil, and which have through long ages proved their innocence and harmlessness. The "wild corner" alluded to is a sheltered spot on the north side of the cottage, the porch cutting off the western winds and to a great extent the afternoon sun. The soil which is heavy, and on a solid clay foundation, is enabled, by the shade of the porch and the vines with which it is draped, to retain a considerable degree of moisture, especially near the house, and here the flowers transplanted from the woods find a congenial atmosphere. Near the outer edge of the "corner" or bed, where the sun at morning wakes the flowers from their sleep, and sends his rays for a parting benediction at the close of day, grow those plants which do not need the "innermost recesses" of the "forest primeval" to develop their beauty, and in their company are a few cultivated plants, the pansy, the hemerocallis, some iris which crossed the continent to find a home here, and the staid little English daisy,—which "play propriety" and chaperon their wild companions from the field and forest.

Well in the shadow the beautiful fern-like foliage of the *Dicentra cucullaria* rises

to view in early spring, and soon the quaint flowers appear. Hardly are the "Dutchman's breeches" off the line, before the *Mitella* sends up its graceful spire of tiny bells, adorned with a fringe beside which the frost-work upon the window pane seems often coarse by comparison. By the middle of June, the fairy flowers of the *Mitella* are succeeded by the gleaming ebon seed, which, in their tiny nests of green, suggest the eggs of some infinitesimal bird. Before the bells of the mitrewort have rung their parting chime the more showy racemes of the *Tiarella* burst into feathery bloom, bringing to mind the ever recurring question, "why have not florists utilized this lovely plant, beautiful in foliage and bloom, and so admirably adapted to the many places where delicate white flowers are required?" Its utility as a cut flower is but one of its many good points, since it is a showy ornament of the garden at a time when flowers are not abundant, and is of the easiest possible culture. While the individual flower of the *Mitella* is perhaps more beautiful and delicate, the blossoms of the "false bishop's cap," being thickly set upon the stem and of a different form, the raceme of the latter is more showy and effective. Indeed a patch of the *Tiarella*, in full bloom, is suggestive of a snow drift unmelted by the spring sunshine, so numerous are the flower stems, and so dense and white the mass of bloom.

Both of these plants, the *Mitella* and the *Tiarella*, the true, and the "false bishop's cap," have been well described and figured in the *MAGAZINE*, but the airy grace of their delicate blossoms does not lend itself readily to the engraver's implements, or the artist's brush,—“it must be seen to be appreciated.” As either the *Tiarella* or *Mitella* can be grown in sunshine or shade, and require little care, save weeding, there seems to be no reason why they should be deprived of their rightful place in the perennial garden, to which they will do as much credit as many of the flowers advertised under high sounding titles in the floral catalogues of the day.

Near the eastern end of the bed the diervilla or "bush honeysuckle" waves its yellow blossoms, as if bidding the passing bee to swing on its lithe branches and test the propriety of its common name. One great bumble-bee (why not *bungle*

bee, I wonder, as surely he is one of the most bungling and clumsy of insects) accepted the invitation a while ago, but after visiting several flowers departed without giving his opinion as to the honey producing capacity of this American bush. High above the diervilla rise the flower stalks of that persistent and irrepressible plant, the *Hemerocallis fulva*, and beside it the golden trumpets of its sweet-breathed relation, the "lemon lily," shine in the June sunlight. The *Aquilegia leptoceras chrysantha* has hurried up close to the latter, and bends over it as if comparing the gold of its own beautiful flowers with that of the *hemerocallis* bloom. Clustered around it are plants of its small relative, so dear to the heart of every New Englander, who loves the flowers which brightened his childhood's days,—the *Aquilegia canadensis*, whose graceful blossoms of crimson and gold vanish long ere its stately Arizonian companion vouchsafes a flower. Under the leaves of the *hemerocallis* twinkle the tiny stars of the pimpernel, brought here from the sandy shores of Nantucket, as the English doubtless brought it to the Atlantic coast from the mother country long, long ago. This little European plant seems to possess the happy faculty of adapting itself to varied situations, flourishing as contentedly in the "New World" as the old, and accepting with equal grace the clay soil of the wild corner or the sandy earth of eastern Massachusetts. Close to the ground by the diervilla nestles the white flowered *Viola cucullata*, a sport which is not uncommon in this species, and with its pretty blossoms hardly touched with the blue of its race, save for the delicate lines of color in the center of the flower,

is a dainty companion for the lily of the valley, growing near. Against the foundation of the house is spread like a network, the beautifully cut foliage of a native geranium, the *Geranium Robertianum* or "Herb Robert," and amid the lovely foliage glow its pink and purple blossoms, forming a picture of exquisite beauty and grace.

Near the house violets of various kinds form a "happy family." The *Viola canadensis* with its white flowers touched with the odor of apple blossoms, the yellow violet, the *Viola rostrata* and the sweet double violet, long an honored guest in the garden, all live in perfect harmony, as if "Jack in the pulpit" in full canonicals and in the *very* corner of the "wild corner" had given them a sermon from the text, "Behold how good and pleasant it is for brethren to dwell together in unity."

Just where the porch joins the house, immense leaves of the *Asarum canadense* spread their wings over the ground as if to hide every trace of the queer bell shaped flowers, which seem always trying to conceal their existence from mortal vision. *Now* the great leaves serve to shelter the beautiful foliage of the *Good-ye-ra pubescens*, which looks as if wrought from the finest satin and covered with the most exquisite product of the lace maker's art. The yellow flowers of a tall *ranunculus* are drooping almost directly over the leaves of its Asiatic sister, which has as yet shown neither bud nor blossom, and one wretched Canada thistle is taking a *favorite* look at the Bugnot pansies lately planted, since even the life of a *Canada thistle*, and idle gossip about a "wild corner," must come to an end.

E. LUNEY, *Hoosac, N. Y.*

FLOWERS FOR MEMORIAL DAY.

When we consider how much flowers brighten our lives and cheer our homes it seems hardly possible that of the dear things we can have too many and give to those we have too much care and attention.

More and more as we advance in the scale of refined living do flowers become our inseparable companions. We want them in our homes, in our churches, upon lecture platforms; everywhere that life is at its best there flowers are too; and how

much do they add to the grace and the beauty of life.

It is not strange, their need and influence being felt and recognized, that standing committees are kept in many churches to attend to their proper disposal about the pulpit upon all occasions of service; that they are sent in sympathy and love to the hospitals and jails; and in compliment to any we would honor.

How far a good influence is diffused in this way it were difficult to determine, but

of one thing we may be sure, no evil influence goes with flowers. Evil is not of them nor in them, and naught but pure influences emanate from their presence; they are the fairy touches to existence; the last degree in the adornment and the grace of life; and how their lovely faces shine to point the way to God!

The presentation of flowers is our highest form of compliment to orator or singer—as is the laurel wreath to the poet—and by their “voiceless language” heart can speak to heart in a way never given to words.

Many and increasing are the public occasions where the floral decorations are an important feature. Weddings, funerals, school commencements, banquets, May festivals, flower sundays and memorial days all call for flowers—more flowers. So now when we make out our annual list of lovely things which we must have, let us not forget the special lists for special occasions; and herewith are some suggestions of flowers that may be had for Decoration Day—for which of us would go empty-handed when others are raining gifts of flowers on the beds of the fallen brave.

The strongest, sturdiest, royalest flower of the spring time, and the one on which we base our highest hopes for Decoration Day is the Chinese pæony; of these VICK mentions some thirty-one varieties, pink, rose and white. *Paeonia fragrans*, “one of the best pink varieties,” and double white, are specially desirable; then there is another sort as crimson and as double as a Jacqueminot rose, staying long in bud and as fine for dependence on color as the Jack roses themselves—perhaps Mr. VICK will tell us its name—they are to the May time what roses are to June.

Snowballs there are, always; and in connection with crimson pæonies give remarkably fine effect; but do not wire their stems or much of their beauty and adaptability is lost. Some late lilacs are usually to be had, and what is prettier than a spray of the white lilac, and what more fragrant than the waxen, tinted ones? Lilac must surely go in the list, though it were well to whisper that the white is said not to bloom until its seventh year; but even with this disadvantage it pays to plant it.

Rivalling the snowball in purity and

wealth of bloom is the *Syringa Philadelphia* (Mock Orange). The bloom is firm, waxen, purely white and fragrant—does not wilt easily—perfectly hardy and grown with a well rounded head makes a beautiful bush eight to ten feet high. Fine for cutting.

Next in value come the spiræas. *Spiræa prunifolia* (Bridal Wreath) being one of the most beautiful shrubs in existence—the flowers are small and pure white, and double; so thickly set on the stem, and so curving of branch, that it need only to be bent and tied with a ribbon to form a complete and dainty wreath.

The Yellow Lily (*Hemerocallis flava*), once so common in our gardens, but now rarely seen, will some time have its beautiful fragrant bloom in readiness for Decoration Day. Only the buds should be used as it is a day lily and the flowers already expanded soon wilt.

The deutzia is a most desirable shrub, perfectly hardy, a profuse bloomer. *D. gracilis*, bearing clusters of twenty to fifty white blossoms at the end of each branch, is a beautiful shrub, and blooming early is very useful.

Of cultivated low trees the White Fringe tree (*Chionanthus Virginica*) is rare and beautiful. The leaves are broad and glossy and it bears in May and June a profusion of pure white flowers whose petals are so fine as to resemble fringe. It seldom grows more than eight feet in height but is a fine object in its glossy foliage after its crown of white is gone.

The aquilegias or columbines, are fine border flowers and of good dependence for cutting, they grow freely from seed, but will not bloom the first season. The columbine is a graceful flower and is grown in many colors both single and double, the double flowers on strong yet graceful stems are of good form and substance, filling up well in floral work, and very durable. The single flowers set on their slender stems well above the larger blooms, droop their graceful bells very engagingly and look not unlike gay butterflies hovering over the other flowers. The aquilegias should be transplanted each third year or newly started from seed, as they will otherwise become single. They need a deep, rich soil and repay cultivation.

And then the Iris! Of a great variety of

colors and all handsome, they make a garden gay between the tulip and the rose. The earliest kinds commence to bloom early in May, and with a good collection the blooming season may extend over a month. From a list of some twenty-five varieties briefly described in Vol. XI, page 218 of VICK'S MAGAZINE, we select three, two of which, Bacchus and Dr. Blis, are described as free bloomers, the third Cherau, is thus described: "Dwarf; flowers medium size; stigmas and petals bronzy yellow; sepals veined with maroon on white ground, superior edge bordered with maroon." Bacchus has a large white flower beautifully veined with purple. Dr.

Blis is a clear straw color. These are varieties of *Iris Germanica*, and given a favorable season, no doubt will succeed well with fall planting.

This is a simple outline of what we may have abloom by a little care and forethought as early in the season as the last of May, though it by no means comprises all; but with the sweetest, the most appropriate of all—the pansy—we will close the list. Pansies! for thoughts. Pansies with such childlike earnest faces as almost to speak the kindly tender thoughts which are in our hearts when with loving hands we twine a garland of our floral favorites for Decoration Day. DART FAIRTHORNE.

BACHELOR'S BUTTONS.

If Bachelor's Buttons once enter the family gardens they come to stay—not, however, to the discomfort of the gardener, but, on the contrary, to his continual delight. For this self-same annual appears year after year under the most adverse circumstances, to furnish its graceful, dainty blooms from early summer to the very end of the season. I only give them the odd corners because of this pertinacity to live and do well where nothing else will, and so oftentimes they have but the vegetable garden for a back-ground with but a common potato or pea-vine for a comrade. They are so very old-fashioned that I think our great-grandmothers must have been the first to plant the seed, and few of the flower loving world of to-day are as well acquainted with their merits as our ancestors; yet as old things are every day growing more fashionable why should not this charming old flower?

Sometimes the people upon coming into my country garden from the town below cry out, "Oh, what are those?" and when

I tell them Bachelor's Buttons, they have not even heard of the name but are delighted to have a handful to wear. And by the way, no flower with a long slender stem is more graceful than these for a breast-knot or will last longer out of water—their vitality and pertinacity again.

They are of a variety of colors of which different shades of blue and pink are the most common, with sometimes a clear pure white among them. They grow upon tall slender stems and are wonderful little blooms of ragged or pinked-out edges with only themselves for show, since their foliage is so delicate it is not at all observable when they are in bloom. They will sow themselves year after year, coming up in the hardest and most uncompromising places and require but the hand of the weeder to keep them in order. For a tall delicate-lipped vase they are peculiarly beautiful as cut flowers, and will last upon the stalks until you wonder at them; and all the time their colors remain as bright as at first.

H. K



FOREIGN NOTES.

ROSE DUCHESS OF ALBANY.

We greatly regret to find that the expression, on the part of a correspondent, of a doubt as to the distinctness of this rose from La France, has caused great annoyance to the firm by whom the rose in question was sent out. Those who, like ourselves, saw the two roses as shown on Tuesday last at the Royal Horticultural Society side by side, will by no means share the doubt alluded to, but will consider the two as quite distinct. Duchess of Albany, we learn, is a sport from La France, but it is alleged to flower more freely, while the color, as shown, is obviously much darker, and the edges of the petals rougher. The rose has been certificated both at the Royal Horticultural Society and the Royal Botanical Society. There is greater justification for bracketing Jean Soupert and Grand Mogul the "too-much-alike" roses; but it is stated that, whilst Jean Soupert rarely produces a good flower, Great Mogul (a seedling from A. K. Williams), produces a fair average of good flowers.

Gardeners' Chronicle.

SCHIZANTHUS.

Wherever there happens to be a conservatory or large greenhouse that is kept well furnished with flowering plants this old-fashioned annual should be grown in pots. During spring, before fuchsias, geraniums, and other soft-wooded things come in, the schizanthus when well grown will make a display that it is not easy to match. Sow five or six seeds in a three-inch or four-inch pot, thinning the seedlings when they come up to one or two. A cold-frame, with the plants raised up close to the glass, is the best place for them until the time for housing comes. Before the roots get much crowded move into six-inch pots, which will be large enough to winter them in. A position near the glass in a house or pit where a greenhouse temperature is kept up is all that is required for the winter.

B., in *The Garden*.

ASHES FOR GARDENS.

A great deal of potash is exhausted from the soil by garden vegetables, and even in land naturally rich in this substance it is apt to set into insoluble and unavailable forms for use by growing crops.

In gardens always well manured in other respects, a lack of potash may make them less productive than their condition otherwise will warrant. Wood ashes mixed with soil aid powerfully in keeping it moist. The potash then becomes a solvent, and by keeping soil moist it generally increases the value of any manures that have been applied. It is often remarked that gardens dry up quickly despite good cultivation. This is often caused by an excessive amount of coarse stable manure. It needs wet summers to enable crops to grow without injury over so much coarse manure. When it becomes dry it is an injury rather than a help to plant growth. Wood ashes are a more effective because more constant remedy for drought than watering the plants can be.

Journal of Horticulture.

THE SAGO PALM.

The Sago Palm bears fruit but once. Its load of nuts is its final effort; it has fulfilled its allotted task in the great round of nature, and there remains nothing for it but to die. The nuts become ripe and are strewn in thousands around the tree until the fruit stalk stands up by itself empty and bare. The great branches turn brown and drop one by one to the ground. Inside the trunk the work of decay is going on until what at one time was a mass of white sago and pith becomes nothing but a collection of rotten brown fibers. One day the trade-wind blows perhaps stronger than usual, and the leafless column of the trunk falls with a crash, destroying in its fall many of the young palms that are springing from the nuts scattered some months before.

C. M. W., in *Journal of Horticulture*.

THE SPANISH IRIS.

The illustration that accompanies these remarks shows the beauty of the Spanish Iris in the garden when grown in large clumps and so placed that their characteristic beauty is not overshadowed by more vigorous neighbors. The Spanish Iris is a fine old garden flower, a native of Spain, where it inhabits districts along



SPANISH IRIS.

the coast at elevations as high as six thousand feet above the sea. This and the so-called English Irises are the most commonly cultivated of the bulbous group, but we are pleased to see that more appreciation is now shown those other gems very different in character to the Spanish kinds, but of delightful beauty, and often sending their lovely flowers through the snow in the early spring months of the year. Unlike the English Iris, the Spanish Flag grows early, and when a few inches above ground will weather with impunity the severest of winter frosts. But with the advent of warm spring weather growth again commences, the narrow leaves gradually unfolding themselves until in the

month of May or June a rich abundance of strong flower-spikes is produced. The soil that best suits the Spanish Iris is sandy loam, not without an admixture of manure or leaf-mold. Poor, starved land will not support its rude growth, nor will a moist soil ensure success. A happy medium between the two is wanted, with exposure to the sun and freedom from wet in the autumn, when the bulbs should have every encouragement to successful ripening. It is easily increased by offsets, which, either when removed from the plants or brought in, should be quickly and carefully planted to prevent the loss of vital power. We advise that once a clump has become established to leave it alone, permitting it to spread out in its own way. Large masses always give more pleasure than a few single spikes, and if only those who plant gardens would remember the wisdom of creating rich effects by bold masses, there would be less inclination to tamper with thriving clumps. Four years will suffice for the Spanish Iris to make a good show, and when

division is considered necessary it should be done at the time of the withering of the leaves. Those who care to embark on the patient work of raising seedlings will be rewarded in the space of about three or four years, sometimes less.

As in the English, so in the Spanish Iris, the flowers show much diversity of color, and in the latter section a certain stiffness and formality that the other class is happily free from, but the colors are rich and varied, running through many charming shades of bluish color, derived doubtless from the type, *I. xiphium*, while the more pronounced purple, violet, yellow and bronzy tones are the outcome of the Portuguese variety. It would be impossible to enumerate all the

varying tones, but their rich variety is an enduring charm, and while the Dutch continue to indefatigably raise seedlings, so will the range of coloring extend. The flowers, by reason of their bold shape and colors, are very handsome when cut and placed loosely in a large bowl.

London Garden.

ORIGIN OF BORDEAUX MIXTURE.

Great discoveries are frequently made by accident, or, at least, by indirect means. It appears that the mixture of copper-sulphate and lime which is proved to be so valuable for the vine-mildew, peronospora, potato mildew, as well as for insects, was, first of all used in the vineyards near Bordeaux to keep off thieves. The outer rows of the vines were sprayed with this substance to render the berries distasteful to marauders. After a time it was discovered that these outer rows did not suffer from the mildew whilst the inner rows, which were not washed with the copper solution, suffered; and this particular mixture, says Professor RILEY, has since remained at the head of the cheap remedies for many fungus diseases.

Gardeners' Chronicle.

CATALOGUE ILLUSTRATIONS.

The following remarks by the *London Field* in regard to English catalogues will apply with equal force to those of many nurserymen and seedsmen issued in this country, with illustrations all overdrawn, and colored plates done in the crudest and loudest manner possible:

What is the reason of their uniform

badness? Everything drawn as it is not; all natural grace gone in the attempt to get at some silly ideal of the man who fancies he knows the way flowers ought to grow. Color to make one seek for a raw beefsteak to rest the eye; form such as lives nowhere out of the florist's head. Pity it should ever get out of his head on the paper. It is silly, and a discredit to the trade, while of no use in the end to make people buy. People always buy best when they feel they can trust, and this plant distortion takes them in. And so it comes to pass that the vast sums spent in catalogues, which might be a powerful aid in making people know and like plants, are almost lost because the catalogue maker insists on things being drawn not as they are, but as he thinks they ought to be.

NEW PLANTS.

Among the plants which received certificates from the Royal Horticultural Society at its exhibition, in London, in October last, are the following, as recorded in *The Garden*:

Richardia Æthiopica Little Gem. This is a pretty little Arum lily, the flowers quite white and small, but sufficiently large to make a show when several appear together, as in the plant exhibited. Many uses can be found for it, especially as regards indoor decoration.

Bouvardia Purity. This might be described as a cross between *Humboldtia* and *jasminiflora*, but the tube is much shorter. The result is a useful plant, the flowers carried in dense heads, pure white, and showy in a mass; the habit is compact and the growth vigorous.



PLEASANT GOSSIP.

PLANTING SEEDS.

I used to think in the early days of my flower gardening, what trouble it would be to plant seeds in a hot-bed or cold frame, and then transplant where the plants were wanted to bloom in the open border. I thought it enough to plant them where they were to remain. When I think it all over now, I wonder if I really loved flowers then. *Now* no labor would be too much to bring anything in the flower line, I very much admired, to perfection. And I have learned some very excellent lessons by experience, especially on the planting of seeds. Seeds, if planted in the open ground too early, say before May, are very apt to rot, the ground at the time being too cold, and not in the proper condition. And then the poor seedsman is condemned for selling old seeds. It reminds me of an old German lady near me, who always used to plant in April when the "moon was full." Just at that time, into the ground went the tenderest and choicest flower seeds. The result may be imagined, and the blame was put on the seeds, of course. But a few lectures, which I delivered to her free, induced her to try my plan of a hot-bed, and boxes in the house. In this climate, we must try to lengthen the season, and can only do that by planting early. If one waits to plant in May, frost will catch many tender things before they have bloomed. For here in Iowa we often have heavy frosts in September. Last year dianthus were budded to bloom when I set them out, and verbenas were large and thrifty and soon blossomed finely; hollyhocks planted in boxes in the house in January, bloomed in August. This was an experiment. I now consider it a great saving of labor to plant, and then transplant. In the first place you have your beds in the border clean, free of weeds, and in nice condition to receive the plants, and your plants are, of course, ahead of any weeds that may afterwards appear, and the keeping of that bed clean is scarcely any labor at all. While, if plant-

ed in the open ground, it was always a search for the tender seedlings among rank weeds, for weeds *will* come up and grow so strong, you sometimes wonder how they do so quickly. Then from the time the flowers come up it is a hard to hand fight all summer to get those poor flowers through. Now, with me everything that can be transplanted is planted in cold frames or boxes in the house, and I don't break my back over weedy looking beds, but just take solid comfort in looking over my clean garden.

M. R. W.

FLOWER NOTES.

Last spring I received, by express, an Otaheite orange plant which was about two and one-half feet in height. I had it put in the ground for the summer, where it grew and blossomed. I did not see the flowers, as I was absent; but I am sure they were there for on my return, in September, I found ten tiny green oranges started. I had the plant taken up very carefully and potted. For two weeks I had it part of the time in the front hall, where it could have outdoor air and the sun a part of the day. A part of the time I set it out on the platform, and it had one good bath from a rainstorm. I have found newly potted plants to be greatly revived by the rain when the leaves have wilted. They would come up all right. The orange plant now has a place on my plant stand in a sunny window, where it is a very ornamental addition, and the tiny oranges are growing, and I hope will ripen in due time. This variety is of dwarf habit and admirably fitted for pot culture. It blooms and fruits when not more than a foot and a half high. The blossoms, it is said, in no respect differ from those cultivated for fruit at the South, which, for their loveliness and fragrance, are chosen to deck the bride at her wedding. They are borne at intervals during the year. The fruit is half the size of ordinary oranges and very delicious.

The Trifoliolate Orange. I have plants of this variety which, being of a low, shrubby growth, is also well adapted for pot culture. The leaves are unlike the Otaheite and other oranges in that they are trifoliolate. They are bright, glossy green, very pretty. The flowers are said to be larger and more beautiful than those of any other variety, and are borne almost perpetually. The fruit is small, bright orange-red, juicy and sweet. The hardiest of the orange family, and will, it is stated, endure our northern climate in the open if protected. I would not be willing to incur the risk at present. My plants were sent by mail, and therefore not very large. They were set in the ground with geraniums, which, by their rank growth, quite overshadowed them, so that they did not grow much. I trust they will do better in the window garden.

The Golden Fleece Abutilon. This is sometimes catalogued as Golden Bells. A plant bedded out in June grew rapidly and blossomed freely. The large, golden bells are very attractive. I can commend this sort as deserving of a place in any collection. I admire the abutilons for the outdoor and the window garden. Strong growing, free blooming summer and winter, and free from all pests, except the scale, which adheres so closely to the bark and is so near its color that one must look sharp to find it. I have no difficulty in dislodging it with a sponge and warm, soapy water.

The variegated - leaved abutilon, Eclipse, of recent introduction, is very ornamental for the window garden. It bears an abundance of red bells set in a yellow calyx.

The Madame Salleron geranium is not only fine for the border, but a pot filled with it is very attractive for a window bracket. This is entirely distinct from any other silver-leaved variety and much superior. The white margin is deep and does not curl and blight, as is often the case with others. The foliage is borne in dense masses, on long stems directly from the center of the plant. By all means have Madame Salleron geranium.

The first of September, on my return home, I found a small plant of the new white fringed hydrangea had three trusses of bloom, the center one large, the two side blooms quite small but

perfect. The first of October I had it potted, and now it is very ornamental on a bracket. It is said to be pure white with a crimson spot in the center. Mine had probably been in bloom some time, as the white was of a greenish hue, and a part of the florets had turned pale red. There is no crimson eye.

I have cultivated the generally grown varieties of primulas, both single and double, but I must give preference to *Primula obconica*, introduced about two years ago in this country. It has grown rapidly in popularity and is grown by thousands for the cut flower market. The flower umbels are borne on such long stems, far above the foliage, that they are admirable for this purpose, and then its wonderful keeping properties make it invaluable. Florists state that it will remain fresh in water "from four to six weeks." Unlike the common Chinese primrose, the individual florets are not borne on short stems, thus crowding them into a solid bunch, but each stands out distinctly, so that the cluster is exceedingly graceful. The color has been described as being pale lilac, but mine are the purest white with a dot of yellowish-green in the center. Each petal is heart-shaped. I never had a hanging plant that gave me so much satisfaction as this, which, as I write, is full of its lovely flowers.

MRS. M. D. WELLCOME.

SPRAYING TO KILL CURCULIO.

The following report of the Ohio Agricultural Experiment Station on spraying plum trees with Paris green and water is an account of the best test for this purpose that has probably ever been made, and indicates that it may be a valuable practice.

The greatest enemy to the plum is the insect commonly known as the plum curculio. This is the cause of the wormy fruit that so often falls from the trees. Various remedies have been tried for this pest, and for several years trials have been made at the Ohio Experiment Station of the method of killing the insects by spraying with a very dilute mixture of Paris green and water. The experiments were again repeated this season by the station entomologist, Dr. C. M. WEED, with good results. An orchard of 900 bearing trees in Ottawa county, Ohio, right in the heart of a great fruit growing region, was selected for the experiment. In the north half of it the method of catching the curculios by jarring on a sort of inverted umbrella mounted on wheels was employed, while the south half was sprayed four times with pure Paris

green mixed with water, in the proportion of four ounces to fifty gallons of water.

The first application was made May 8th, just after the blossoms had fallen from the late blooming varieties. There was a heavy rain the same night and it rained almost continuously until May 15th, when there was a short cessation. The second spraying was done on that day. The third spraying was made May 26th, and the fourth and last, June 2d.

On the jarred portion of the orchard a great many curculios were caught, showing that they were present in numbers. A careful examination of both parts of the orchard was made on June 3. Between one and two per cent. of the fruit on the sprayed trees had been stung, while about three per cent. of the plums on the jarred trees were injured. No damage to the trees was then perceptible.

Early in July the orchard was again examined. Some of the sprayed trees showed that the foliage had been damaged by the spraying, but the injury was not very serious. Not over three per cent. of sprayed fruit was stung at that time, while about four per cent. of that on the jarred trees was injured. But on both the fruit was so thick that artificial thinning was necessary to prevent overbearing.

A large crop of fruit was ripened on both parts of the orchard, and so far as could be judged from the experiment, the practicability of preventing the injuries of the plum curculio by spraying was demonstrated. This process is very much less laborious and costly than jarring, and if future experience is as successful as this season's work, plum growing will become much easier.

ABUTILON—TUBEROSE.

Will you please inform me how to treat a white maple? I have one, and I think a great deal of it. At present it is covered with buds, but they are all falling off, and the buds that open do not stay on long, that is, they fall off in a day after opening.

I have also a number of tuberose in pots for winter blooming. Will you please direct me with some information about them, through your MAGAZINE?

M. D., *Troy, N. Y.*

We suppose our inquirer means an abutilon by a white maple, judging from the character of the inquiry, though it is allowable to suppose almost anything in connection with common names. It is probable that this plant has been outside and that the dropping of the buds is concurrent with the change from the open air to indoors. Keep the plant in a cool place, if possible, where the temperature is never more than, or not much above, 60°. After a time the plant will adapt itself to its new conditions and the buds will cease to fall.

Blooming tuberose in the house with ordinary window treatment, or with any treatment that it may be practical to give in window culture, is difficult. The bulbs need heat, sufficient moisture, and a somewhat moist atmosphere, and to command these properly and carry the plants

through the winter in a healthy, growing condition requires more than ordinary skill. If any of our readers are successful in blooming tuberose in the window in winter or early spring, we should be pleased to have them give their experience in relation to it in these pages.

LATE BLOOMING ROSES.

Our correspondent, THEO. H. MACK, who contributes in this number the article on "Hardy Roses all Summer," has written us again, and referring to what he had written, says:

Since my last note was written I have cut from the bushes in the open ground, and entirely unprotected, from one to five kinds of roses every Sunday, for church decoration, up to October 26th, notwithstanding we have had several frosts that froze vegetation stiff. And a good sister at the church door, on the latter date, asked if my flowers were ever going to freeze up.

We trust Mr. M. will give the readers of the MAGAZINE more particular information about his methods with roses.

A PARK ASSOCIATION.

Garden and Forest proposes an association, continental in its scope, of those who are interested in public parks and national and state reservations, with the view of annual meetings in the different cities, for the purpose of mutual exchange of ideas and discussions, mutual help and encouragement, as well as seeing what is being done in all parts of the land. The idea is an excellent one and we think it will not be long in taking tangible form. Such an association would have a powerful influence for good.

PRIMULA OBCONICA.

A writer in the London *Garden* notices the uses of this plant for bedding, and says that he has "proved it a beautiful subject for moist nooks or depressions on rockwork, or about the base of stones, planted in broad patches as one would plant for bedding. As this primula is practically a biennial, one may take all the use out of it in the open air by bringing young plants on in the winter and spring and planting out about May.

"The leaves are poisonous to myself, especially about the hands and wrists, and the merest touch is sufficient. I have an opinion that other plants are poisonous in a similar way. The reason

for my opinion is the suffering I undergo about the hands and wrists when I handle such plants as poppies and others that have stiff hairs. The symphytums and anchusas act similarly, but in a less virulent manner. The pollen of poppies causes sickness when one is compelled to be near them. I pretend in no way to be able to explain by what process these results come about. I can only say that I have watched and noted closely the above facts. I have learnt to abhor the stinging effects of *Borago laxiflora*."

CENTAUREA CYANUS.

The *Centaurea Cyanus*, variously known as Bachelor's Button, Corn Flower, Corn Bottle, Bluebottle, etc., is worthy of a place in every garden, whether we consider it in regard to hardiness, freedom of bloom, delicacy and variety of color, or for grouping with other flowers for bouquets, or for using as a button-hole flower.

The seed can be sown in the fall and the plants will begin blossoming early next spring; though after it is once introduced into a garden it will take care of itself in this respect, sowing its own seeds. Some self-sown plants which I transplanted into my garden, last spring, have been a source of great pleasure. I really think they have produced more blossoms to the square inch than any other plants I ever cultivated. They have been constantly in bloom since last June, and now, the last of October, they are still full of buds and blossoms. If our climate were only mild enough I think they would keep on blooming for months to come.

The blossoms are very pretty in shape, and, being borne singly on long, slender stems, they combine readily and gracefully with other flowers. Put some blue Bachelor's Buttons, some Ox-eye Daisies and a few airy grasses loosely in a glass with a spreading top, and I am sure you will be delighted with the effect. They also combine beautifully with sweet peas.

The blossoms vary greatly in color, being white, pink, blue and purple. The blue one, which is a real, true blue, is the national flower of Germany, and grows in as great profusion in the fields there as the single scarlet poppy. It is said to have been the favorite flower of the late Emperor WILLIAM, and that he often

appeared with it in his button-hole. I think its beauty is more appreciated in England than it is in this country, as, notwithstanding it grows wild, florists there cultivate it largely, and bouquets of it are constantly on sale. Why do not our florists cultivate it? F. B.

BLEACHING DRIED FRUIT.

According to the Experiment Station Record for October (U. S. Department of Agriculture), Director HILGARD, of the California Station, believes that the public should be taught to prefer "healthy, brown, high-flavored fruit to the sickly-tinted, chemically-tainted product of the sulphur box." When freshly sliced fruit is treated with sulphurous acid for a short time, the effects are slight, yet such as to protect the fruit from insects. When thoroughly sulphured after drying, however, the fruit is injured in flavor; and, worse still, sulphuric acid is formed in sufficient amount to be injurious to health. By analysis sulphured apricots have been found to contain .232 per cent. of sulphuric acid, or about twenty-five grains of oil of vitriol per pound, and prunes .346 per cent. of sulphuric acid. In most countries of Europe the sale of sulphured fruit is forbidden.

GERANIUMS—TUBEROSE.

How long does it take seedling geraniums to bloom?

Do tuberose bulbs bloom the first or second year? I have one that has been growing since last spring, and has ten small bulbs around it, but has shown no signs of bloom. It is growing nicely yet. How shall I treat it this winter?

E. E. LUNDY, *Indian Territory*.

Geranium seedlings will bloom the first or second year, depending on various conditions and the habit of the variety.

Tuberose bulbs bloom when they have obtained their full size, it may be in one, two or three years. Usually at the end of the second year the bulbs have formed within them the flower buds ready to send up a flower stalk the following season. The particular bulb here mentioned is past its blooming stage, whether it has ever flowered or not, and the old bulb is henceforth useless. The young bulbs can be taken up before heavy frosts come, and be dried off and then laid away in a warm place in the living-room, where the temperature will not fall below about 50°;

if it is warmer it will not injure them. In this way keep them until spring and then plant them out, and with another season's growth they will make blooming bulbs for the following year.

CHINESE YAM.

Will you kindly let me know what to do with the bulblets which grew in the axils of the leaves of the Chinese Yam—*Dioscorea batatas*? I inclose a few of them. Should they be kept, like the gladiolus bulbs, out of the ground until spring, or planted this fall?

R. J. B., *Bremen, Ohio.*

Keep the bulblets during winter as proposed, free from frost, and plant them out in the spring. A box of dry sand in the house is the best way to preserve the little bulbs.

THE CROMWELL BLACKCAP.

This variety, sent out for the first time this season, originated at Cromwell, Connecticut. The fruit is said to be juicy, delicious and of beautiful appearance, and from four to eight days earlier than Shaffer, Souhegan, Ohio and Hopkins.

CHESTNUTS FOR MARKET.

Samples of American chestnuts, superior to those of foreign growth both in size and in flavor, have recently been received at the Department of Agriculture, affording a striking illustration of the results of culture and selection. By these means it is believed that the maturity of the chestnut likewise may be materially hastened. Reports received from various sections of the country indicate that the nut may be best prepared for market by being immersed in boiling water for about ten minutes as soon as gathered. Wormy nuts will float on the surface and may be removed; all eggs and larvæ of insects will be destroyed; and the condition of the meat of the nut will be so changed that it will not become flinty by further curing for winter use, and still be in no wise a "boiled chestnut." The nuts may be dried in the sun or in dry-houses after being placed in sacks in such quantities as to admit of their being spread to the thickness of about two inches, the sacks being frequently turned and shaken. Dried by this method they remain quite tender, retain for a long time the qualities that make them desirable in the fall, and may be safely stored; but, of course, will not germinate. A

bulletin on nut culture is being prepared by the Division of Pomology, and when published may be obtained by applying to the Secretary of Agriculture, Washington, D. C., or to the Division of Pomology, Department of Agriculture.

* HEATING AND ARRANGEMENT OF GREENHOUSE.

When my greenhouse was still a "castle in Spain," I began to study up the matter of heating it, were it ever to materialize. I wrote to practical florists for their opinions. Some advised steam heating. Others advised hot water heating. The majority seemed to be in favor of the latter system. After investigating the relative methods of both systems and visiting houses heated in both ways, I came to the conclusion that for small houses, such as the amateur would be likely to build, hot water heating is much preferable in several ways. Steam heating would doubtless be better for large houses, but in small ones it would not be as controllable, and certainly not as cheap, as hot water heating. Many dwellings are now heated by steam or hot water, and where this is done, it is an easy matter to extend the system to the greenhouse without much trouble and but little extra cost over the expense of the piping required. In such a case, you can heat your greenhouse very cheaply. If you have to buy a heating outfit expressly for it the cost will be considerably increased. When my greenhouse was first built, I had a heater put in for heating it, while the dwelling part was warmed by coal stoves. Two years ago I decided to discard stoves from the dwelling and put in a hot water apparatus large enough to furnish heat for both dwelling and greenhouse. I find that it works perfectly. The greenhouse circulation is controlled to suit the weather, by valves in the pipes taking the water from the heater to the greenhouse, so that a large amount of heat can be let on if desired, or all heat can be shut off by simply opening or closing a valve. It is the same with that part of the circulation which extends to the dwelling. The quality of heat is much

* A chapter from *Home Floriculture*, by EBEN E. REXFORD, now in process of publication by JAMES VICK SEEDSMAN, and to be issued this month.

more satisfactory than that obtained from steam, being moister and milder. Steam heat is pretty sure to be dry and intense in character. With the hot water system a slight fire can be kept, but as long as you have any fire at all the water will circulate in the pipes, while with steam you must keep the fire brisk enough to bring and keep the water to that degree in which it will give off steam to fill the pipes. It will be readily understood from this that the temperature can be regulated much more satisfactorily in a small house where hot water is used as a means of heating than it would be possible to do with steam.

The pipes by which the greenhouse is warmed run around the building on the sides and one end. There are four of them, all four inches in size. They are arranged with valves in such a manner that two pipes, one flow and one return, can be used for ordinary weather, while in cold weather the two others can be added. The principle of circulation may not be understood by the reader who has not looked into the matter, but if he cares to "post" himself, he can very easily do so by sending to the manufacturers of heating apparatus and asking for their catalogues, in which the system is fully explained. He can get estimates from them of the cost of fitting out his greenhouse with heating outfit.

In arranging the interior of a small greenhouse economy of space must be taken into consideration, and at the same time due regard must be given to an arrangement which will admit of showing off the plants most effectively. I would advise running a row of benches around two sides and the end, about three feet wide. In the center I would have a table or stand, with shelves arranged in such a manner that when filled with plants it would look like a pyramid of foliage and flowers. It would be a sort of plant stand rising from each side and both ends to a central shelf which would be high enough to lift the plants on it well toward the roof. In this way you can arrange your plants very effectively, and they will not be crowded, while they get the benefit received by being as near the glass as possible. This gives you a walk all around the house between side benches and tables.

Against the end next the dwelling I

have vines trained which completely cover the walls and run along the rafters.

Water is obtained from a well in one corner. In putting the glass on the roof, the patent zinc joints were used. I would advise all who build to use these, as they effectually stop the cracks which are made by lapping glass, thus keeping in a great amount of heat, and keeping out a great deal of cold.

The ventilating sections are controlled by rods and cranks which enables any one to lift or close them very easily, and the sash can be left at any place with the assurance that it will stay there till moved by the power which controls it. It can not be lifted by a sudden gust of wind and flung down upon the roof, breaking glass and often sash bars, as ventilating sections often are when the old style of lifting rod is used.

I am often asked to give estimates of the actual cost of constructing such a house. This it is impossible to do, because the cost of work and material varies so. With me lumber may be cheap, while with you it may be expensive. The only way to get at the probable cost of such a structure is to go to some practical carpenter and tell him what you want. He can figure out the amount of lumber, the quantity of sash, the cost of the work, and give you a very close idea of the total cost with the exception of the heating apparatus. The cost of that, as I have said, you can ascertain by correspondence with the manufacturers of it.

THE HOLLYHOCK DISEASE.

Number 2, Vol. VI, of the Journal of Mycology, issued by the Division of Vegetable Pathology, United States Department of Agriculture, is now being distributed. Florists will find the publication of special interest, as it contains a full account of a new hollyhock disease and of successful experiments in its treatment. The disease appeared in several New York houses a few years ago, and has proved a very serious pest, the loss this season in one establishment being over \$3,000. The knapsack sprayer mentioned in a previous number is described and illustrated. This machine has been found as effective as any of the more expensive pumps, and not being patented can be made at small expense. Other papers in the journal discuss recent in-

vestigations concerning the smut fungi; a new and destructive disease of oats; copper soda and copper gypsum as remedies for grape mildew, etc. For the benefit of those who are specially interested a reprint of the article on the hollyhock disease has been issued for special distribution, and may be obtained by applying to the Secretary of Agriculture, Washington, D. C., or to the Chief of the Division of Vegetable Pathology.

THOSE TWO ROSES.

Replying to my article in the October MAGAZINE, L. S. LA MANCE says my old favorite of unknown name, so like the Dinsmore, is doubtless the Madame Charles Wood. This accords with an opinion given me in a private letter by the original grower of the plant. But opposed to these opinions stands the fact that in the same bed with the old favorite—"Our Pet," as I have called it for lack of other name—I have a strong, well established plant, bought from some other grower, years ago, for Madame Charles Wood, and while some individual roses on it have very much resembled the Pet—so much so that I once had nearly decided that they were identical—yet a close comparison shows that this specimen of Madame Wood is less vigorous, less thorny, and the foliage lighter green, and more than all other differences, does not show as large clusters of buds and flowers, and has, so far, never bloomed more than one-third the time, mainly in June, and a sort of secondary crop a few weeks later—while the Pet is practically never out of bloom till the last buds freeze up on the stems. Hence, there are three horns to this dilemma: the Pet is not Madame Charles Wood, or else the one bought for that sort is not Madame Wood; or else the Pet, from some cause or other, is a much superior strain of the Madame Wood to the other.

Another difference was especially noticed in the season of 1889. The Wood formed many large, fine buds, but not one in a dozen ever opened into a rose, for they grew as solid as cabbage heads until the petals burst loose from the stem at the base of the bud, instead of opening into bloom. The Pet, however, right beside it, bloomed beautifully right along. This year, the Wood did better in that respect, most of the

buds opening into beautiful flowers, but it practically bloomed but once—in June.

THEO. H. MACK.

A RETARDED HOLLYHOCK.

I wrote you, last year, and spoke of a hollyhock. I took the root and set it in another place, and in the mowing of my yard, this summer, it was cut back twice. After this it was not molested, and about the time all others had ceased to blossom this one commenced. This has now, November 1st, a dozen blossoms and as many buds, and the stalks are as green as in July. Now, why not cut back half of the crop, and keep up a succession of bloom until late fall?

S. A., *Phoenix, N. Y.*

This method of retarding the bloom of the hollyhock is quite practical, and may be employed with many kinds of perennials. It will be best not to cut back but once, as the cutting has the tendency to enfeeble the plant, and then, in most seasons, we have frost a month earlier than it appeared this year.

NATURE'S FROLICS.

The past season, with us of Northern Illinois, has been one of contradictions and surprises. To begin with, we had a peculiar winter. It was warm, wet and decidedly "open" until February—so much so that trees and shrubbery started to grow—and then came quite a severe freeze-up, furnishing a limited ice harvest. This killed things more generally than do our ordinary severe winters, and was largely the cause of scanty bloom of roses and other shrubs, and a nearly total failure of the fruit crop.

Then came a wet spring and early summer, up to the last of June—mostly cold rains, too. Following this, a drought reaching into September, when we began to get scanty rains occasionally. This seemed to result in a sort of second spring, as it were, and caused some curious freaks, a few of which I will mention.

One rose (H. P.) grown for five years, and never before having more than showed an occasional stray bloom after the profusion of June, produced two very fair later series of flowers.

Another, class not clearly known, but grows like an H. T., grown for five years, had never bloomed but once before, scantily, bloomed beautifully the entire latter part of summer and autumn, till frost prevented the late buds from maturing.

Very few gladioli threw up flower stems until after the rains succeeding

the dry spell, when they began to come into bloom, and our last spike of fine bloom went to church on the last Sabbath of October, about two months later than usual. Double hollyhocks also continued to bloom till the middle of October.

Although the early frosts were few and light, the prematurely drought-ripened foliage of most trees began to fall unusually early, and the first of November shows us an almost winter landscape, while grass is still rank and green, and hardy flowers are yet in bloom.

THEO. H. MACK.

REVIEW NOTES.

Your illustration of the Constance Elliott Passion Flower in the MAGAZINE for November, is an excellent one and well portrays the form and parts of this very peculiar flower. Unfortunately both this variety and its parent, *Passiflora cœrulea*, bloom very sparingly in this locality; they make extremely luxuriant growth of vine, retain their dark green, glossy leaves until the winter is well advanced, and by protecting the roots well from severe freezing they will survive an ordinary winter and start rapidly into growth in spring.

Passiflora incarnata is a different species indigenous to the Southern States, which is thoroughly hardy anywhere without protection. It makes a fine vine and flowers very freely. It differs in some particulars from *P. cœrulea*; the leaves are three-lobed instead of seven, the sweet-scented flowers are light purple and smaller, and the plant instead of being half-hardy and shrubby in nature, is wholly herbaceous.

I saw a white, large-flowered variety of this species in bloom at Mr. VAUGHAN'S greenhouses, Western Springs, Ill., last summer, that will, when introduced, probably enjoy a run of greater popularity than Constance Elliott did. It will prove better suited to general cultivation and is much clearer in color.

Further tests in cross-fertilizing corn, this season, have fully confirmed all that I wrote you on this subject last May. Grains of sweet corn and Indian corn of every imaginable color may be found in one ear, in some instances, that originated from a grain of perfectly pure parentage fertilized with pollen from cross-bred corn I raised last year.

While crossing different varieties or hybridizing different species may not affect or alter the appearance of the seed-vessel, it is not at all unreasonable to expect the seeds to be changed by this means. The ovules, or seeds in embryo, when caused to attain to maturity by fertilization with congenial pollen from another plant, should theoretically partake in their characteristics of both the parent plant's seeds, especially when they are of different species. The instance of cross-fertilizing corn is an excellent proof of this idea in regard to crossing varieties, and more cases might be cited by others, probably, who have had more experience in such matters than I.

L. GREENLEE mentions the Gentian in her article in the MAGAZINE. We have several species native here, but the only handsome one appears to be a form of *Gentiana puberula*. Its indigo blue flowers are nearly the size and shape of a Canterbury Bell, borne in a cluster at the top of the plant, and last three or four weeks during September and October. This and many other handsome native plants may be found wherever a well preserved strip of the original prairie remains undisturbed along the Illinois Central railroad. Cultivation and travel have banished all the beautiful native plants forever from our fields and roadsides and replaced them with a host of ill-scented and homely weeds, or perhaps ill cultivation has brought about the last result. Thinning and excessive pasturing have accomplished the same effects in the woods, but beauty must be sacrificed to utility, at least where nature is concerned, any way.

P. W. A., *Arcola, Ill.*

THE CABBAGE LOUSE.

Next to the cabbage worm the worst insect enemy of the cabbage is the aphid, or plant louse, which is so often found upon the leaves and in the heads in great numbers. This is a small, bluish-white insect, that subsists upon the sap of the plant, and multiplies with great rapidity. Like most of the peculiar family to which it belongs, this insect has the power, not common among insects, of bringing forth living young, but with most of those that have been carefully studied there is in the fall a sexual generation by which the true eggs are laid, and in the egg state most of them pass

the winter. But although the cabbage aphid has been known both in Europe and America for more than a century, the sexual generation has never heretofore been found, and entomologists did not know where or when the eggs were laid, nor how the insect passed the winter. Recent investigations, however, carried on at the Ohio Experiment Station, by Dr. C. M. WEED, has shown conclusively that the sexual generation develops late in autumn on the cabbage, and that the eggs are laid on the cabbage leaves. The true male is a small winged creature, with a more slender body than the other winged forms. The egg-laying female has no wings, and is pale green in color.

This discovery of the fact that the insect passes the winter in the egg state on the cabbage leaves has an important economic bearing. It suggests as one of the best ways of preventing the injuries of this pest, the destruction during winter of the old cabbage leaves with the eggs upon them, instead of leaving them undisturbed until spring, as is too often done.

GEN. GRANT SWEET POTATO.

Since publishing the article, in the October number of the MAGAZINE, about this variety of sweet potato, we have had many inquiries about it from parties wishing to procure it. We find that it is as yet a variety but little disseminated. Our correspondent, HELEN KERN, of Germantown, Ohio, who wrote the article, cannot now supply the potato, but we are at liberty to say that parties who may apply to the above address next fall, say in October or later, may procure it in small quantities. Miss KERN consents to take this course at our request, in order to gratify those who may wish to make a trial of this superior variety.

NOTES AND QUERIES.

I wonder how many of the readers of this MAGAZINE have this beautiful geranium, Madame Thibaut, and what success they have had with it. I hope all that have this ivy-leaved variety are as well pleased with it as I am with mine; among all my plants there is none admired more than this one. All lovers of geraniums should surely have it in their collection.

Will some one having the Chrysanthemum

Mrs. Alpheus Hardy tell what success is met with in cultivating it? Mine will not grow as the others do, and at the present time, November 7th, there is no sign of a flower. Is it a late bloomer?
J. F. D.

STATE TREE AND FLOWER.

By an election held by the school children of this State, in May last, the maple was chosen as the state tree, and the goldenrod as the state flower. The goldenrod had 81,308 votes, and the rose 79,666 out of a total of 318,079. The other votes were divided among one hundred and twenty-eight different plants. CHAS. R. SKINNER, of the Department of Public Instruction, informs us that "the selection of the goldenrod was due principally to the fact that the country districts did not promptly send in the result of the votes taken in the country district schools. This result was made public on the first of July. Additional reports which came in from the country districts reduced the plurality of the goldenrod to about 600, and it is very probable that if all the school commissioners of the State had reported to us the rose would have been chosen instead of the goldenrod. The cities voted largely for the goldenrod."

The city children evidently had a better idea of what they wanted than the country children, and this is not strange. To them the goldenrod, which they see mostly during the summer vacation, is the flower associated with their pleasant days of recreation, days of sunshine, of freedom and enjoyment. This flower will not grow less in their esteem, and the better they know it the more will they admire it.

LEAVES OF LIRIODENDRON.

An interesting paper on the leaves of Liriodendron (Tulip tree), by Mr. THEODORE HOLM, has recently been published in the Proceedings of the U. S. National Museum. The attention of the author was drawn to the subject when observing the germination of various species of trees in the vicinity of Washington, D. C. He collected a large number of leaves from both young and old trees, and noted great variation among them. Although this variation is well known to botanists, few writers on systematic botany have

made any special mention of it. Mr. HOLM's object, he states, was to prove that, as far as known to him, there is not a greater difference in the foliage between many of the described species of extinct *Liriodendron*, than there is between a series of leaves from a very young tree or from a branch of an older one of our recent species.

There is but one, or, at most two, species of the genus living. One of these is a native to North America, and the other, possibly a variety only, occurs in China. From trees of the North American species, Mr HOLM collected leaves which show all gradations from an entire to a deeply lobed leaf. Some were orbicular, some bi-lobed, some four-lobed, and, in fact, variations without end in the number and extent of the lobes. In very young trees he found five different forms out of six leaves.

He then examines the characters upon which palæobotanists have based their species. He remarks that the nervation does not seem to be sufficiently characteristic to certainly identify the genus, nor are the lobes at the base enough. The peculiar notch at the apex seems the most characteristic feature, but where this is wanting, the identification of the leaf with the genus in question is considered doubtful.

All the described extinct species of the genus are found in cretaceous and tertiary strata, and a list of fourteen species and eleven varieties is given by Mr. HOLM. He discusses the characters assigned to these by their various authors, and considers the fossil forms show the same kind of variation as the living species.

The paper is of special interest, as it calls attention to the great amount of variation in the living form, and argues that ancient forms, perhaps, were equally variable. The inference would be, naturally, that many of the supposed fossil species are simply variations of one or a few forms.

J. F. J.

LOST NUMBERS.

If any number of the MAGAZINE has failed to reach any subscriber during the year, and the volume is thus incomplete, please send us a postal card, stating what number you need, and it shall be forwarded if we still have it.

THE MAGAZINE FOR 1890-1891.

The year 1890 passes away, and this issue closes the present volume of the MAGAZINE. In its pages have been noted some of the successes and some of the failures in plant cultivation among our readers and others. Many of the evils incident to this work have been recorded, and many pleasant and satisfactory results have been noted. How best to prevent and mitigate the difficulties that await the gardener, first in one form and then in another, has furnished themes for many writings. Notice of new methods of culture, new and improved varieties of plants, flowers and fruits, and the many advances in the different departments of horticulture have been presented. Thus our readers have been kept informed in regard to the most important matters which are of interest to them as plant growers, and have been enabled thereby to turn the information so gained to their advantage. Knowledge is power is an old saying, but it is especially true in relation to knowledge directly applicable to our daily use, and the power thus secured enables us to re-enforce our usual efforts to an extent that carries us over obstacles that otherwise would impede our progress, and delay if they did not entirely prevent our attainment of profitable and satisfactory results. The successful worker in any branch of the world's work must be informed especially in what relates to his own department, and this fact is now recognized in relation to every industry. Papers and magazines are multiplying, and readers are increasing in manifold ratio. The management of this MAGAZINE close the present volume with a purpose steady and strong to make it subserve the best interests of all its readers and to promote the welfare of horticulture in every possible way. It is not expected that every article will suit every reader. It is intended to be like a repast that shall have something suited to the taste of each, and all can find what is most agreeable to them. But especially shall we always keep in mind the needs of those who have made but little progress in plant culture, and therefore need the most assistance. For these the plainest instructions will be given, and they will always have liberty to our pages to make such inquiries as they desire.

In accordance with our usual custom of stopping all subscriptions at the close of the term for which they have been paid, a large proportion of subscriptions will be closed with this number. We expect that our readers will renew without delay, and thus receive the January number at the usual time. But we expect still more, and that is that every one of our present subscribers will make some effort to induce neighbors and friends to subscribe. A little good will and timely effort, with a word in season will have an influence that will result in increasing the usefulness of the *MAGAZINE*. Terms of subscription and premiums to agents will be found in our advertising pages. Let us help one another.

BINDING THE MAGAZINE.

We will bind the *MAGAZINE* in nice cloth covers, for any subscriber, for 50 cents, and return the book, with the postage or expressage prepaid by us. Please give your name on the package when sent, so that we may know to whom it belongs.

IRIS KÆMPFERI IN JAPAN.

In a paper read before the Massachusetts Horticultural Society in the early part of the year, by WILLIAM P. BROOKS, Professor of Agriculture in the Massachusetts Agricultural College, he thus mentions the Japan Iris: "Now for several years, every season has witnessed in Sapporo a display of these marvellous flowers, by a local horticulturist, which, in Boston, would be the wonder of the town. He numbers his varieties by the hundreds, and has perhaps an acre of sunken beds separated only by the narrowest of raised paths. Most of the plants stand five or six feet in height and bear enormous flowers, a foot and more across and seemingly in every hue and in every possible mixture of all hues. Truly, as I have sat and gazed upon the wondrous display, I have felt ready to exclaim, 'This is the Queen of Flowers.'"

A CURE FOR RED SPIDER.

In your *MAGAZINE* of November, 1890, mention is made of that troublesome little plant pest, the red spider. Since I learned, after a number of experiments, an easy and effective plan to be rid of him, I will give it for the benefit of those who may have plants injured by his visits. First, shower the plant all over thor-

oughly with dry insect powder—don't be afraid of putting on too much. Let it remain about twenty-four hours. Second, plunge the plant, pot, earth and all in a tub of water, and let it remain there over night; in the morning, gently wash the plant while under water, lift it and set it in the sunshine to dry. The water needs to be of a temperature a little tepid or the plant will be chilled. The fingers can be run through the leaves while under water without any injury. The plant may lose a few leaves in the process, and these chiefly because of the previous injury done to them by the spider; but I have removed the spider utterly by one application of this treatment, even when they were very numerous, and had the plants rather improved by their bath than otherwise.

As for the flat, white mealy bug that damages all plants that he visits, I have found no means for removing him, excepting to rub him out of existence with a small damp brush. These two are the worst of all enemies to house plants.

S. M. T., *Providence, R. I.*

CLOTH COVERS FOR MAGAZINE.

We will furnish elegant cloth covers for the *MAGAZINE* to our subscribers for 25 cents each, and prepay postage. Any bookbinder can put on these covers.

A,B,C OF STRAWBERRY CULTURE

In this monograph one will find all the practical instructions for the best methods of strawberry growing. It is very complete, and all written in a most attractive and readable style. Some of the subjects are as follows: Shall Farmers Raise Strawberries? Long Rows and Cheap Cultivation, Rotation, Manuring, Preparing the Ground, When to Set Out, What Varieties to Plant, Marking the Ground, Setting the Plants, Cultivating and Hoeing, Mulching, Can Farmers Grow Strawberries to Sell? How to make the Plants Grow Right Along in Dry Weather, Mulching vs. Irrigation, Mr. SMITH's Great Yield and Two of the Secrets. Numerous other topics cannot be enumerated here, but it is sufficient to say that every question connected with the subject is brought forward and well treated. All who are interested in raising strawberries, either for home use or the market, should read it, study it, and make their practice better and their crops more valuable thereby.

OUR YOUNG PEOPLE.

"A LEETLE MITE SPRUNG."

A CHRISTMAS STORY.

"Helen, dear, come down stairs quickly, the Laughing Man has come, and wants to see you. It's such fun to hear him talk; do come. He giggled all over when he found you were at home."

"No, Pet, I can't go down now; have no time to waste on the poor fellow. Cousin Grace and I are trying to decide what kind of Christmas presents we shall make for our friends. We are going to help each other, and I mean to keep her here until we have them all finished."

"That will be lovely," said Pet, and both arms were clasped about her cousin's neck in a trice, followed by a shower of kisses. "But, do, please, come down, sister, and talk just a minute with the Laughing Man."

"No, no, no, I can't, dear; he's a perfect nuisance. If he amuses you, go talk with him yourself. Go, please, and don't disturb us again, that's a dear, sweet sister."

"I'm so disappointed," sighed Pet, as she slowly vanished through the door.

"Does she refer to an automaton carried around for exhibition?" asked Grace.

"O, no, it's a veritable man. But our old Tom says 'he's a leetle mite sprung in the upper story.' I think he's a good deal sprung, for my part. I suppose he has a history, but have never cared to question him. He belongs to the Infirmary, but is always on the alert to escape, and he often succeeds. . . . Now we'll look over these illustrations and descriptions of which I told you, and search for something useful and pretty that we can make. For people who live in trunks—and their name is legion—here is a new thread-and-needle case of soft, bronzed leather, with 'rubber snaps' run through the shirred pockets to keep them snug and tidy. And here's a new idea for a bag, to be made mostly of rings and rosettes, lined with ——."

"Stop, stop, please, Helen, dear, let us not make a bag this year, not one. Bags of all possible size and material

have fairly rained down upon this country of late; like the locusts of Egypt, we have had a plague of bags. The fact that baskets and satchels of every imaginable kind were not to be had in our grandmothers' time, and that therefore they resorted to home-made bags as receptacles instead, should be no reason why we should so absurdly adopt their use. Some of them really are of use and handier to carry on the arm for the knitting ball than a basket; and a precious one that I have will often be used in that way. But as a rule, uses for bags have been trumped up merely for an excuse to make them."

"For instance?"

"Well, fancy bags for dusters and for small articles of soiled linen."

"Where do you keep yours?"

"Before we had a housemaid, I kept one duster in a pocket of my shoe-case. (The case is made of enameled oil cloth, plain and strong. A box plait at the bottom of each pocket is firmly stitched to the back. The whole is simply pinked around the edges and tacked to the inside of my closet door.) Another pocket, a broad one, is fastened just above the shoe-case for my soiled linen pieces, or, they are taken to the bath-room, where a suitable bag, if you please, made of towels, receives them ready for the laundry. . . . I may be peculiar, but I cannot consider things ornamental that are suggestive only of the dirt they hide. Half the charm of certain simple ornaments is in the associations they call up."

"Very true; for instance, white birch bark, mullein puffs, thistle balls, spruce tree cones, curious fungus growths, sea shells, etc., all may be so deftly handled as to make pretty ornaments—some of them useful ones—while by association they take us in thought to fields and woods and ferny places and to tide washed shores."

"Yes, you have the idea. Now consider a moment the doubtful taste of a

gilded and satin-lined, tiny wash-tub for your dresser, or lilliputian wash-boards, gourd-dippers and full fledged clothes pins bronzed over and bedecked with ribbons. Are they not all directly suggestive of the laundry? Fitting insignia, they may be, for a laundress, if, indeed, even she should care to be reminded of her calling when not on duty."

"You put it rather strong, cousin Grace, considering how many poor people there are to whom only inexpensive things are attainable, and who are pleased and amused by such trifles. You may as well include rolling-pins in your list of doubtful ornaments."

"Yes, and perhaps I am too critical. But I can't help seeing things as I do. And, Helen, I feel disheartened now about our plans, before we begin. Every body we know have everything they need or want already. Do you know I am annoyingly haunted with an idea, lately enlarged upon by our rector, and am going to impart it to you at once, that you, too, may feel uncertain and unsettled."

"O, don't, please. I've covered my ears and can't hear a word."

"You'll get tired of that. He says that the key-note of the universal christian holiday is LOVE—Christly love; and that this love will make us seek out only the poor and needy as fitting subjects for our favors on that particular day; that children in pleasant homes should be taught that much is given them at that time that they, too, may be able to share their good gifts with less favored children, thus teaching them benevolence and unselfishness in early life. And this good man insists that the precious assurance—inasmuch as ye have done it unto one of the least of these ye have done it unto Me—should make joyous the hearts of all such givers. And he says that when callous hearts are touched to tenderness by such benefits is just the time to impress upon their minds that Christ so loved the poor and lowly that *Christians seek His favor for themselves* by trying to help the needy ones around them. . . . But to be candid, Helen, I don't love the poor in the true, Christly way at all."

"Neither do I," responded Grace. And for one whole minute the two girls looked quite forlorn. Then Grace arose and emptied a large box of parti-colored flosses, silks and plushes sprinkled all

through with the glitter of gold and silver tinsel. Then, turning to Helen, she said:

"Look at the material I've brought to make things for the poor and needy."

Then they both laughed a little and sighed a good deal, until Helen rallied enough to say:

"I don't think it's one bit nice for you to upset me in this way. At any rate—"

"I thought you had your ears stopped."

"At any rate, we've got to get through with this Christmas the best way we can. But if we become converts to your rector's idea—and I'm awfully afraid he's right—we can inform our friends hereafter that there are their birthdays and other anniversaries, including the New Year, upon which they may receive special gifts, but that we shall bestow our Christmas favors upon another class. But here is Pet again. What is it this time, dear?"

"You must come down, for the Laughing Man will not go away until he sees you."

"Yes, go down," added Grace, "and I'll go with you. I want to see what he's like."

So down to the basement went the three, where Helen saluted the man with a "good morning."

"Good mornin', ha, ha, ha."

"Did you want to see me for anything especial?"

"Ha, ha; of course, I did; he, he, he."

(A pause.) "I've been thinking you must have a history. Tell me about yourself. In what country were you born?"

"Ho, ho, ho, that's a good one, he, he, he; I wasn't never born in no country. Ha, ha, ha. O, goody gracious."

"You astonish me; I've always considered you a remarkable character, but, really, I had no idea of any such mystery as this. Please tell us your origin."

"O, crackey. Ha, ha, ha; that's easy to do. He, he, he. O, but this is a rich one. Ho, ho. Too good to tell, an' too good to keep, oh, oh. I shall die. I—I was born on—on the ocean—I was, indeed. O, lordy, this will kill me," and the man swayed from side to side, holding his ribs in a spasm of uncontrollable laughter. When he had quieted down, Grace asked him if he had ever had a wife.

"Ho, ho, that's the jolliest one yet. Of

course, I did, he, he, he, an' the puttiest little boy ye ever laid eyes on—curls an' blue eyes. O, ho, ho, a puffect cherubub, an' his mother was another one. O, ho, but it's jolly to think of 'em."

As no further questions were ventured at once, the artless Pet inquired what became of his wife and boy, at which he again began to roll with laughter.

"Ah, ha; O, ho," shouted he, "this one's jollier than t'other ones, he, he. I mind how the freshet roared and laughed, ha, ha; how it shouted and frolicked, pitchin' an' bumpin' our little house along in its play. The boy fast in his mother's arms, she on her knees prayin' like fun, an' me reachin' from a winder to ketch to a tree top that was tryin' to sail for a change. O, glory, that was a rip-roaring trip. Ha, ha, ha. When we went to pieces a timber that was playin' high jinks struck me on the head for mischief. He, he, don't remember much after that—funny, aint it? But I seen the face of my boy, an' his blue eyes an' wet curls, an' he had wings, ha, ha, *ha*; aint that a joke on him. Sure's you live, I've seen 'em—yes, wings. Ha, ha, oh, ha, ha; that was the jolliest old racket that I ever was in. Shall laugh all day an' all night now for thinkin' about it. I always do. Ho, ho, ho, it's better'n a printed story."

By this time the eyes of Helen and Grace were suspiciously humid, and Pet very sober. Helen, thinking to divert the poor man's mind in another direction, inquired if he had pleasant friends at the Infirmary, which instantly set him off into fresh laughter, which the reader can improvise for himself.

"O, ho, gay old friends; gay old place to stay at. . . . 'Pleasant friends!"

Grumpy old cranks is what they are. . . . Half of 'em crippled up, or else bed-ridden. . . . O, glory, such friends; humpbacked growlers, don't know how to laugh, never did know. But there's nice youngsters there; yes, there is. None on 'em got wings, though; no, they aint, they're the common sort, easy pleased, little fools. Tie a string to a board an' call it a wagon. . . . You'd die a laughin' to see 'em. Dolls, too, made out of old salt bags stuffed with rags—strings tied around to squeeze in the neck and waist, an' oh, such nursin' as the little ijiots give them things. I have to roll on the ground an' yell. If I couldn't git away I'd laugh myself to death. I would, honest. O, hail Columbia, what a jolly old world this is. . . . But I must be gettin' on. Glad I seen you, miss. . . . You've made me see the blue eyes again, an' the curly hair an' the wings, an' it's cheered me up. . . . has, indeed. Good mornin' to ye, ha, ha, ha, *ha*!"

When Helen and Grace returned to their room again, one said to the other:

"Suppose we make a bushel or so of doll babies."

"Well, and shall we buy a wagon load of small carts and wheelbarrows?"

"Yes, and we can make a lot of pretties—not too elaborate—for our friends, besides, to be prized as souvenirs of our own handiwork, made precious by the love and sweet wishes wrought in with the stitches, rather than by any intrinsic value they may possess. They'll understand."

"I don't know; I hope so. If they were all as sweet as you are they would."

"Please don't."

MARIA BARRETT BUTLER.

THE COCOANUT PALM.

One of the most striking features of the cocoanut palm is its crooked or curving trunk. Most kinds of palms are noted as growing perfectly erect, their trunks standing like perpendicular columns, but the cocoanut palm is an exception, as may be seen in the present illustration. By referring back to the January number of the current volume of the MAGAZINE, on page 9, will be found an engraving, made from a photograph, of a cocoanut

grove in one of the West India islands, and there it will be noticed that all the trees grow with curved trunks. The body of the tree is of very uniform size or diameter throughout its whole length, and at the top is surmounted by a large tuft or head of pinnate leaves spreading out in every direction, like great fern fronds. Within the tropics, and under the most favorable conditions on the sea shore, the trees grow to a height of sixty

to a hundred feet, but inland the average height of full grown trees is about fifty feet. Some large plantations of cocoanut trees have been made within a few years along the Atlantic coast, in Florida, that have grown well, and the prospect is that they will continue to thrive there. The name of this palm has been supposed by some to be derived from the Greek word, *kokkos*, a fruit, referring to the large nuts; but it is more probable that it comes from *cocos*, the Portugese name for monkey, and so called because of the appearance of the nut with the three holes at one end,



COCOANUT PALMS.

suggests a monkey's face. The botanical name is *Cocos nucifera*, the last name meaning nut-bearing. The trees are easily raised from the nuts; these are planted in holes made in the sand, and in about three weeks the young plants appear above ground. The trees commence to flower when from five to eight years old. The flower clusters are borne in the axils of the lower leaves, and from these are formed a cluster of several nuts. Thrifty trees sometimes bloom as often as five or six times in a year, and thus the fruit hangs on the tree in every stage of growth. It requires a year for the nuts to mature. Each nut is covered with a loose, fibrous husk, and the nuts can be best kept and sent to market in their husks. One hundred nuts to a tree is considered a good average for trees in full bearing, though occasionally a tree produces twice this number. The pulp of the young fruit, while it is still soft, is eaten

with a spoon, and is said to be delicious. An oil is extracted from the nuts, which is used in cooking and for perfumery. About thirty nuts will produce a gallon of oil. From the husk is produced what is called coir, or cocoanut fiber, and is manufactured into cordage; it is also in use for many other purposes. The wood of both the young and the old trees is very valuable, and even the leaves are employed in many useful ways. The leaves are sometimes eighteen to twenty feet in length, and are used for roofing or thatching, and are made into baskets, mats and screens and other household articles. The tree, when it has arrived at the fruiting stage, is considered strong enough to bear tapping, in the same way that we tap our sugar maples. The fresh juice is pleasant and wholesome; after fermentation it is called "*toddy*," and is slightly intoxicating, and when this is distilled the product is a strong alcoholic liquor. A few only of the many uses that the produce of this tree is applied to have now been noticed, but enough to show that its value must be estimated very high. The life of the tree under the best conditions is about a hundred years, though oftener its highest usefulness is reached at fifty to sixty years.

EDITOR'S MISCELLANY.

PUBLICATIONS RECEIVED.

From the Agricultural Department at Washington, we have lately received Bulletin No. 3, of the Division of Pomology. This is a classification and Generic Synopsis of the Wild Grapes of North America, by T. V. Munson. It is probable that this arrangement of the native vines is more exactly in accordance with the characteristics of the various forms than any other that has been made. Mr. Munson has been untiring in his efforts, for years, to learn the natural relationship of the many species of wild grapes of the country, and he now thinks "the present classification as nearly natural and complete as it is possible to make it in the present state of knowledge." In order to reach the conclusions arrived at, the author has traveled in nearly all the States of the Union, "accomplishing distances aggregating about forty-five thousand miles." He established three successive vineyards, containing all the leading varieties in cultivation and representatives of all the native species. Viticulture as well as science receives the benefit of Mr. Munson's labors.

From the Division of Botany we have received "Contributions from the U. S. National Herbarium, No. 3," being a continuation of the "List of Plants collected by Dr. Edward Palmer in 1890, in Lower California and Western Mexico." The whole is edited by Dr. George Vasey and J. N. Rose. Botanical and practical notes are interesting and valuable.

Insect Life, No. 2, Vol. III, Division of Entomology. This periodical maintains its usual excellence. It is apparently indispensable now for the dissemination of exact information on the numerous insects injurious or useful to plant cultivators.

WELSH'S ENGLISH LITERATURE.

The Development of English Literature and Language. By Professor A. H. Welsh, A. M. 2 vols. crown octavo. S. C. Griggs & Co., Chicago, Ill. This work of Professor Welsh is a remarkable one, and one which will take the very first rank on the subject of which it treats. Both in conception and execution it indicates the work of a clear thinker and a thorough and conscientious student. It commences with the early Britons, traces the changes from the barbarous to the civilized state, the effects on the language by the various conquests, and all other influences during its formative period. During each era of the nation's history there is given a sketch of the politics, state of society, religion, learning, language, poetry, the drama, the novel, periodical history, theology, ethics, science and philosophy. Representative authors of each period are described, giving their biography, style of writing, and the influence they exerted.

The work brings before the reader in the clearest manner the governing intellectual forces of the different stages of growth and progress of the English people. It is the best and most comprehensive work of the kind that has been written, and should find a place in every good library, and be read by every lover of English literature.

ENTERTAINING KNOWLEDGE.

Volume fourteenth of *Alden's Manifold Cyclopaedia* takes the work from Exclude to Floyd. We notice the same skill in the selection and treatment of topics and the same careful editing which has characterized the work from the beginning. In fact, as it progresses, its great merits become still more con-

spicuous. The combination of a dictionary and a cyclopaedia is an excellent idea and is being well carried out. The judicious use of illustrations is a helpful feature, and the treatment of subjects is clear, direct and practical. Thus while it is of great value to professional men, it is also a thoroughly serviceable and helpful work for the masses of the people. Covering the various fields of agriculture, manufacture, commerce, science, art, invention, history, religion, law, biography and politics, the work is truly *manifold* in character as well as name. Specimen pages free; sold on easy installment, if desired. John B. Alden, Publisher, New York, Chicago and Atlanta.

THE ARBOR DAY MANUAL.

This is a beautiful volume intended especially to promote an interest in Arbor Day exercises and to foster a love of nature. It is, in a large measure, a compilation of some of the finest writings in our English literature, both in prose and verse, relating to trees, plants, tree planting, natural scenery, the seasons and similar subjects.

In addition, it contains various programs of Arbor Day exercises, all very full and excellent. To complete the book, an octavo of over 450 pages, there are a large number of suitable songs set to music in four parts for vocal rendering. The whole is beautifully printed and substantially and elegantly bound. The work has been edited and compiled by Charles R. Skinner, Deputy Superintendent of Public Instruction, State of New York, and is published by Weed, Parsons and Company, of Albany, N. Y.

COSMOS BIPINNATUS.

This Mexican annual is a vigorous grower, and plants this season were nearly four feet high. It is so late in coming into bloom that but few flowers had a chance to open before the plants were injured by the cold weather, but the last of October they were full of buds. The flowers, in shape, are like a single cineraria, about two and a half inches across. There are eight petals, or ray flowers, with a yellow center. The rays are a rosy pink for the most part, though some are white. Plants taken up and potted and taken into the greenhouse gave a great number of flowers. The leaves are twice divided, the divisions being very fine, giving the plant a peculiarly graceful appearance. In climates with a longer season than ours the Cosmos would be a valuable plant for fall blooming.

COLUMBIAN EXPOSITION.

The Gardeners' and Florists' Club, of Boston, and the Florists' Club, of Philadelphia, protest against the merging of the Horticultural Department into the Bureau of Agriculture of the Columbian Exposition.

PRIZE VEGETABLES.

Illustrations of the prize vegetables from all parts of the country, as shown at the late Illinois State Fair, with notes on the same, will be given in the January number of the *MAGAZINE*.

MASSACHUSETTS HORTICULTURAL SOCIETY.

The first part of the Transactions of this Society for the year 1890, is received, and, as usual, it is filled with interesting and instructive papers and reports.

